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Palm Beach County Community Indicator Portal

FIU GIS Center
Florida International University

Palm Beach County Community Indicator Portal

A Blueprint for Portal Development and Implementation

This document serves as a blueprint for the future implementation for a county-wide community interactive portal. A need assessment, definition of data scope, portal content and structure, portal implementation timeline and budget, administrative structure, and the sustainability of the portal are illustrated.

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I. Background and Overview

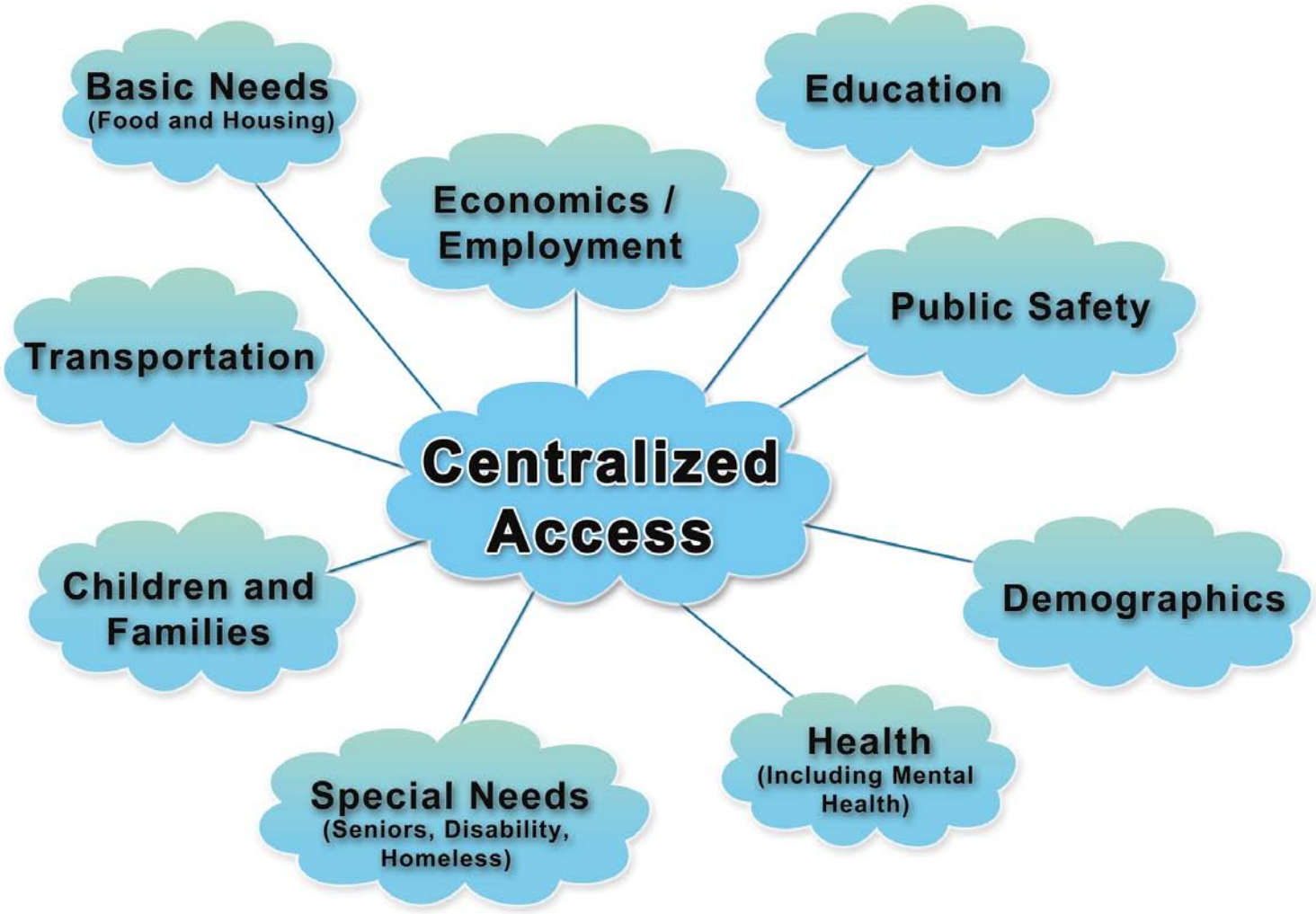
Funding organizations in Palm Beach County recognize the need for, and value of, developing a web-based portal or repository of community indicator information that can be used to optimize their understanding of the community served through their funding, and to maximize their funding resources into the future. To support these activities, the portal must support access to historical and current data and offer information on various community issues.

While the portal may support a variety of funding organization activities, these organizations also appreciate the value that web-based access to this information has for the community more broadly (e.g., supporting county-wide public awareness and community engagement efforts regarding community issues; providing easy access to reliable, valid indicator information; centralizing indicator information as a means to facilitate the consistent, appropriate use of indicator information, etc.).

1.1 Project Goal

The project goal is to centralize access to information related to various community issues in Palm Beach County, with the goal of optimizing the information used to evaluate and improve the quality of life for Palm Beach County residents. The portal will be web-based; easy to use; useful for the general public, funders, decision makers, grant writers and others; and inclusive of a comprehensive array of information that is reliable, valid, and current (e.g., publicly-accessible "raw data", reports, etc.). The data will be arranged by key issues, or community indicators: basic needs (food and housing), children and families, education, economic development/employment, environment, health (including mental health), public safety, and special needs populations (i.e. elderly, disabled, homeless) and transportation. Specifically, the project expects to accomplish the following:

1) Provide "Centralized Access" to information related to community issues utilizing an online platform (see Figure 1).
2) Provide "reliable, valid, current" information including primary and secondary sources from quantitative data and qualitative information.
3) Build State-of-the-art, user-friendly web tools for a community information hub that includes: interactive mapping, visualization, and reporting tools and an advanced search engine and browse mechanism to facilitate information / data retrieval and display.
4) Engage the public in the decision-making process by empowering them with knowledge about their community and increasing public awareness and education about key issues.
5) To connect government agencies, funders, and residents in one platform of community data-sharing and decision-making.



(Figure 1: Centralized Access)

1.2 Portal Planning Team

In order to achieve the goals indentified above, the Quantum Foundation and Community Foundation has funded an FIU Team to develop a planning document for the portal development and implementation. The planning for the portal is comprised of three parties: the funders, the project team, and the advisory groups (also known as focus groups). A project planning website was established at the commencement of the planning phase that allowed for documents to be shared among all members of these three parties. A total of 3 workshops took place during the planning phase. The proposed blueprint outlined in this document is the fruit of the collective work of the planning team. Below is a brief description of the three parties that comprised the planning team.

1.2.1 Funders

Led by Quantum Foundation, the other funders are: the Community Foundation for Palm Beach and Martin Counties, Palm Beach County Children's Service Council, Palm Beach County government, Health Care District of Palm Beach County, Palm Beach County Health Department, Palm Beach Healthcare Foundation, Inc., and the United Way of Palm Beach County. The funders assist the project team in the formulation of the focus groups, e.g. the Targeted Information Advisory group (TIC) and the Technical Advisory Committee (TAC). The funders and the project team communicated via routine conference and in-person meetings to plan activities, check progress and build understanding and consensus.

1.2.2 Project Team

The Geographic Information Science (GIS) Center at Florida International University (FIU) was selected to execute the planning activities of the portal. The FIU Team is composed of the FIU GIS Center, Civica Consulting Group, Inc., the University of Florida (UF) Geomatics, and Social Compact. Together, the team brings unique qualifications to the project. The FIU GIS Center has broad experience in developing web interactive portals for county and local government agencies in the tri-county region. UF Geomatics provides expertise in advanced web search engine development. Civica Consulting, Inc. has over 10 years of experience in community economic development projects. Social Compact contributes their expertise on key issues and indicators in urban and community planning. A matrix of expertise and contributions of team members can be found in Appendix 1—Project Team Composition.

1.2.3 Advisory Groups

Two advisory groups were formed in the planning phase: the Targeted Information Committee (TIC) and the Technical Advisory Committee (TAC). The Targeted Information Committee functions in the capacity of an advisory group with key stakeholders representing all key community issue areas (See Appendix 2—Targeted Information Committee/Technical Advisory Committee). During the planning phase, this

group provides feedback on the scope of data acquisition and selection, content and functionality of the portal, and portal usability. The group will continue to play an important role throughout the implementation phase as they are both the data/information owners, and data/information users. Many of the TIC organizations are direct data owners, from whom agency collected data that could potentially feed to the portal. The need for a Memorandum of Agreement (MOA) for data sharing is identified. Most members of the TIC are officials and managers from local and state government agencies, funding agencies and organizations. A Technical Advisory Committee (TAC) was also formed to provide advice and evaluation of the portal's technical perspective, such as database, IT structure, and functionality design.

1.3 Best Practice Study

The project team conducted a research on best practices of community portals. 21 such portals nationwide were selected. Los Angeles' HealthyCity, Common Good Forecaster of United Way and Hillsborough Community Atlas were ranked as the top 3 of the group's favorite (see Appendix 3 –Best Practice). The following is a highlight of the key characteristics of the best practice portals:

- Simplicity in Design, Richness in Content
- Ability to Set Parameters for Data Retrieval & Visualization
- Presence of a Geographic Locator
- Ability to Visualize Data through Lists, Charts, and Tables
- Ability to Visualize Community Service Points with Demographic Data
- Ability to Visualize Data through Advanced Mapping Options
- Presence of a Dynamic Reporting Tool
- Centralized Access to Data
- Digital Library of Secondary Data
- Secondary Data Mining and Information Harvesting
- Presence of Dynamic Dashboards and Scorecards
- Presence of a Platform for Public Participation
- Online Help and Training

Based upon the research, the key functions are recommended for consideration for the Palm Beach Community Indicator Portal is shown in Table 1. Other recommended supporting functions that facilitate the usage of the portal are shown in Table 2.

Recommended Main Functionalities	Examples
Find Services by category or keyword	http://www.healthycity.org/c/service
Select data Indicators Interactively for mapping or charting	http://www.healthycity.org/c/chart http://open.cridata.org/maps/mapas/map.html
Dashboards	http://www.fldashboard.com/
Dynamic Reports	http://www.hillsborough.communityatlas.usf.edu/

(Table 1 – Recommended Main Functions based upon Best Practice Study)

Recommended supporting functions	Examples
211 Taxonomy	http://www.211taxonomy.org/
A to Z index for browsing	http://www.doh.state.fl.us/atoz.html
Browse by Theme/subject	http://131.247.163.8/hillsboroughcommunity/index.html?style=hillscom
Integrated Search	http://www.healthycity.org/
On-line Video tutorial	http://itis.fiu.edu/itisportal/help/
Training on usage via Webinar	http://www.healthycity.org/c/ahc/sc/who

(Table 2 – Recommended supporting functions)

1.4 Need Assessment from the Focus Groups

Three workshops have been conducted throughout the planning period in order to gauge the needs of the community. During these workshops the project team, the funders, and the advisory committees met and exchanged their ideas.

The first workshop focused on data and information, and desired functionalities (see Appendix 4 – workshop/discussion notes and responses from the project team). The workshop collected feedback from the funders and committee members about the portal's potential usability, data needs and desired functions.

1.4.1 Portal's Usability Assessment

How would a community indicator portal be utilized to help with one's work? This question was posed to seven different focus groups, which consisted of project team members, members from the Targeted Information Advisory (TIC) and led by one of the funders. Each group comments were limited to five responses. The seven groups and the highlights of their responses are shown in Table 3:

Focus Group	Usability of the portal – How does it help one with one's job?
Health	• Data in support of grant requests at sub-county level • Mapping or identification of gaps between existing services and population needs • Transportation services accessible and affordable to health and mental health population • Identification of service providers for Medicaid and Medicare population within a given geography • Mental health pharmaceuticals and physicians through Medicaid

(Table 3 – Usability assessment and response by focus groups) *Continued on the following page

Focus Group	Usability of the portal – How does it help one with one's job?
Children	• Data in support of proposals submitted to funders • Gap analysis between services and service needs • Assistance in decision making as to where to focus services • Measure impact of programs, services, and organizational programming • Identify resources to share with clients and training opportunities
Economic Development	• Generate and synthesize market data for business recruitment • Regional comparison to help identification of the competitive advantages of the county • Data being objective, timely, comprehensive, accessible, and free • Local and regional comparison to address how Palm Beach County fits regionally • Support the diversification of the economic base and attract a higher skill/wage jobs in areas of healthcare, life sciences, technology, aerospace, etc.
Public Safety	• Support of grant writing and advocacy for funding • Identification of critical special needs population in an emergency • Law enforcement data on the incident level • Map of anti-terrorism • Objective data by political boundaries (e.g. Commission District)

(Table 3 – Usability assessment and response by focus groups) *Continued on the following page*

Focus Group	Usability of the portal – How does it help one with one's job?
Homeless/Housing, Aging	• Ability to overlay different layers of information • Mapping of services in community with ability to overlay with demographic information • Maps of community assets, health services, organizations, etc. • Transportation maps and information • Cross tabulation of demographic data and profiles
Disability and Food Security	• Support of grant writing and policy planning • Maps of Services by types and categories • Can data be added? • Need data to make a case to the state – better reporting • Assessment, progress -- Are programs making a difference?
Transportation and 211 services	• Mapping of needs expressed through 211 broken down by time, by issue of concern • Mapping of specific services in relation to question 1 • How mapping and reporting tools will synchronize with emergency operations and emergency response • Maps by services where clients are(organized by agency, service area) overlaid with census demographic data • More towards having trend analysis of all datasets

(Table 3 – Usability assessment and response by focus groups)

The common denominators of all seven focused groups are:

1) Data and information needed to assist with their grant writing, policy planning, decision making, and advocacy
2) Interactive mapping which allows identification of gaps between existing services and population needs
3) Location of services, organizations, and their accessibility and transportation to them
4) Trend analysis, and measurement of impact of programs
5) Reporting tools to generate community profile
6) Mechanism of updating and adding information and data

1.4.2 Data and Information Needs Assessment

Comments on three areas of data and information were requested from the funders and advisory groups: a) primary quantitative indicators relating to a community issue, e.g. health indicators; b) relevant common indicators c) websites and organizations that contain useful information and data. Each of the seven groups provided listings of the data indicators and relevant data sources. The results are compiled in Appendix 4 – Group Discussion Summary Notes with project team responses.

1.4.2.1 Primary Indicators by Community Issues

The *Primary indicators* are the basic building blocks that form community characteristics. The Project team recommended 10 thematic categories for these indicators, in addition to **Common Community Indicators** focusing on the basic socio-economic characteristics, such as population, income, race and ethnicity, education attainment, age, language spoken at home, renter vs. owner, households and family units.

A summary of the primary indicators suggested in addition to what the project team has included in the primary data indicator table (see Appendix 6 – Primary indicators by Subject) by focus groups is shown in Table 4:

Focus Group	Recommended Additional Primary Indicators
Health	• Number/Percentage of a given population with access to certain health services • Number/Percentage of a given population with certain health habits (e.g. smoking, exercise) • Number/Percentage of a given population with certain health conditions (e.g. diabetic, cancer, obesity, etc) • Location and number of health and medical services within a specific area – free clinic, State Health Centers • Location and number of food businesses within a specific area (fast food or grocery stores) • Health Professional Shortage Areas (HPSA) and Medically Underserved/Populations (MUA/P)
Mental Health	• Rates of suicide and institutionalization • Prevalence of mental health, and substance abuse diagnoses in jail/prison population • Number/Location of mental health providers and accredited mental health facilities • Number/Percentage of a given population receiving psychiatric services • Number of Baker Acts and Marchment Acts • Number of school days attended by severely emotionally disturbed children • Number of days worked for pay by severely and persistently mentally ill adults
Children	• Number/Percentage of Repeat Pregnancies • Number/Percentage of Immunizations • Insurance Coverage • Number/Percentage children out of school • Delinquency • 211 service data related to Children

(Table 4 – Recommended Primary Indicators by focus groups) *Continued on the following page*

Focus Group	Recommended Additional Primary Indicators
Economic Development	• Job and labor force growth rate & Jobs created & average wage of jobs created • Unemployment rate • Tax data (*county and cities)* • Occupancy/Vacancy for commercial and industrial buildings • Revenue generated to federal government/returned investment to each municipality • Infrastructure data/Infrastructure spending data
Public Safety	• All court data-broken down by FL Statute or booking charge • Index of Crimes data – FDLE/PBC CJC by all common indicators • Causes of Death – ME's Office • DJJ data by zip and neighborhood • Clerk of Court fees and collection of fees
Disability and Food Security	• Volunteer Income tax Assistance Program • Measuring food sources available for those at the poverty level • Food & Recovery Distribution • WIC Participation • Income by disability • ESE students getting free and reduced lunches • FPIP – School District Data

(Table 4 – Recommended Primary Indicators by focus groups) *Continued on the following page*

Focus Group	Recommended Additional Primary Indicators
Homeless/Aging/Housing	• Granny flats or mother in law homes – where are they allowed? • Affordability and availability of senior housing/public housing • Section 8 contracts • LIHTC/Income restriction • Organization/Classes supporting LMI housing • Foreclosure prevention efforts • Workforce sites • Number/Percentage of senior able to live independently • Health level • Mobility level • Mental health status • Utilization of services in communities • 55 years and older living alone • Aging – 85 and older, by sex, zip, race, ethnicity • Unemployment rates of 22+ • 211 service data related to homeless/aging
Transportation/211	• 211 service data related to these topics • Number of vehicles registered by zip code; • Type of vehicles registered by zip code

(Table 4 – Recommended Primary Indicators by focus groups) *Continued on the following page*

The seven focus groups identified the need for the following:

- Locations of relevant services (either provided by 211 database, or others) by geography
- To be able to overlay existing services with demand information
- Geographic breakdown of indicators are counties, cities, school districts, voting and zip codes
- Domain specific data that are not easily accessible in the public domain

1.4.2.1 Common Indicators for all community stakeholders

The project team presented a comprehensive listing of common primary indicators such as population, ethnicity, race, age, gender, labor force, employment status, educational attainment, income, language spoken at home, and other generic demographic data (see also Appendix 6 – Primary Indicators by Subject). The focus groups chose to keep all common indicators, and add the following:

- # of Veterans
- # of people on food stamps
- Refugee Information/Immigrant
- Race/Ethnicity Breakdown that includes Haitian and Guatemalan Maya Populations
- Sexual Orientation
- Literacy/English as a Second Language
- Where born versus where reside (mobility)
- Citizenship
- Legal/illegal Residency
- Undocumented persons
- Technology Access

1.4.2.1 Additional websites and organizations

The project team presented a sample list of websites and organizations that are potential data owners, either in the public domain or with MOA required. The focus groups added a long listing to the existing list (see Appendix 5 – Data Sources).

Many websites cover more than one community issue. For instance, school district data provides information on education, children, and health. 211 service data base can be applied to multiple community issues, e.g. health, children, homeless, aging, housing, disability, and food security.

1.4.3 Desired Portal Content and Functionality

The project team provided a listing of recommended functionalities including:

- Interactive mapping and graphing tools;
- Customized/dynamic reporting tools;
- Advanced/centralized search engines;
- A to Z index; Taxonomy (trees of related terms);
- Public involvement tools;
- Authenticated uploads of files;
- Ftp download
- Others, specify:_____

The focus groups also provided their input on the desired functionality of the portal. Table 5 presents a summary of their input:

Focus Group	Desired Content and Functionality
Health	Keep all and add: • Filtering abilities to the Advanced/centralized search engine functionality; • Site map; drop down lists; linked glossary; • Social media, blogs (undecided...); • RSS feeds • Listserves • Keyword search in the search engine tool • Q&A section • Help area • Taxonomy for data exploration

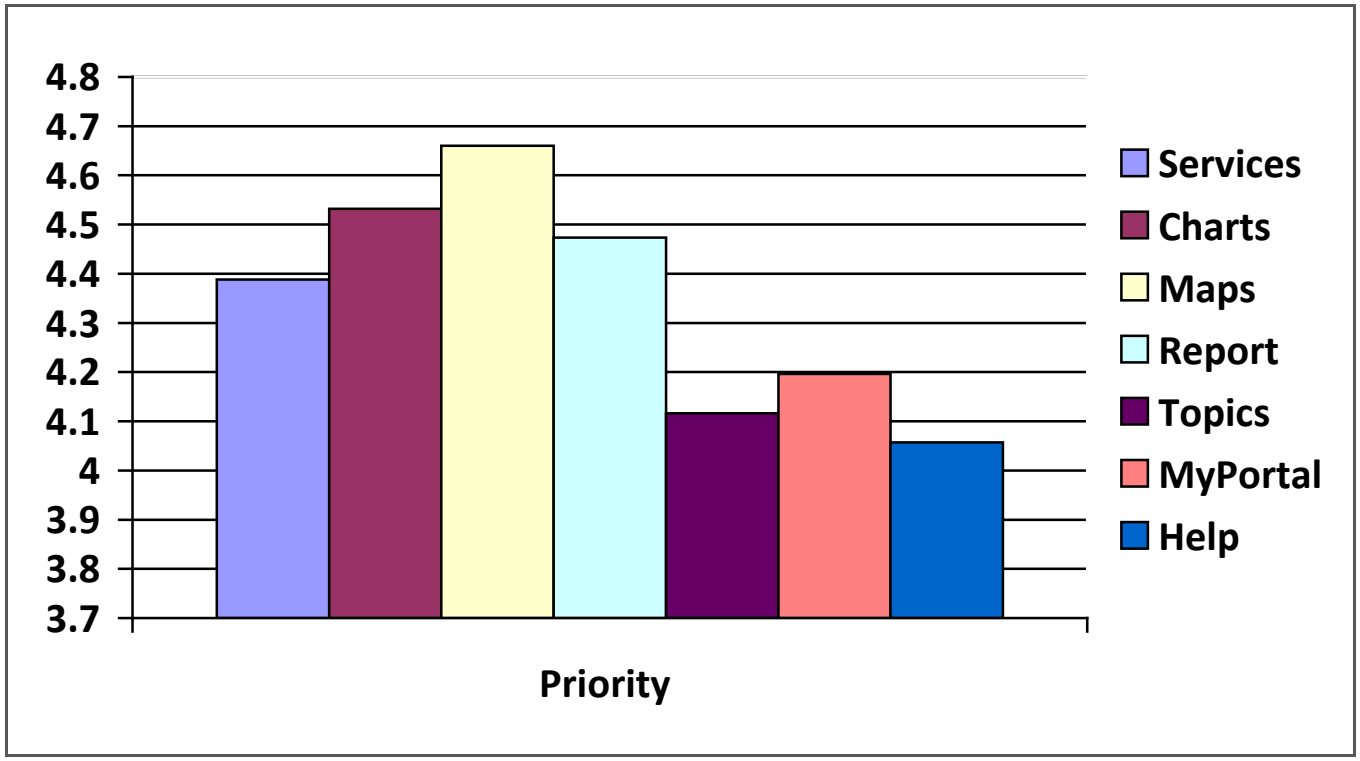
Focus Group	Desired Content and Functionality
Homeless/housing/aging	• Overlap map layers • Forum/Discussion board/Whiteboard • Basic statistics on community organizations • Place for useful links • Partnering Place – a place to match up potential partners for grants • Grants – list of grant dollars in Palm Beach County and who is getting the money • Leveraging – list of leveraging need for specific grants and initiative
Economy Development	• Highlight of economic data sources • Identify and mapping tool • Dynamic reports • Public involvement tools • Listing of county and sub-county level data by category • Mashups of job growth to health crime and other community characteristics to explore trends
Children and Family	• Keep all • Filtering abilities to the Advanced/centralized search engine functionality; • Site map; drop down lists; linked glossary; • Social media, blogs (undecided...); • RSS feeds • Listserves • Keyword search in the search engine tool • Q&A section • Help Area

Focus Group	Desired Content and Functionality
Public Safety	• Keep all • Request for metadata documentation (data limits)
Disability/food security	• Interactive mapping and graphing tools • Public involvement tools
Transportation and 211	• Interactive mapping and graphing • Dynamic reports • Centralized search engines • A to Z Index; Taxonomy • Button to access community services databases of 211 • Routing abilities to guide people to agencies and services via public transit routes; • Transportation routes in proximity to schools; • School districts and bus routes

(Table 5 – Desired content and functionality by focus groups)

All focus groups recommended the function of interactive mapping. Most of the groups also favored the presence of a dynamic reporting tool. Many had expressed the needed for browse search and public involvement tools.

During the 2nd and the 3rd workshops the project team focused on the functionality and sitemap design of the portal (see Appendix 7 – Portal Function and Usage). Out of all the main functions proposed, including services, charts, maps, reports, topics, my portal, and help (See Appendix 8 – Sitemap Evaluation Worksheet), the focus group's priority score ranking from 1 (lowest) and 5 (highest) (see Appendix 9 – Workshop III Survey Results) is shown in Figure 2. In summary, the advisory group and the funders ranked Maps-related functions as the most important. Charts, Service and Reports also received a very high-ranking score.



(Figure 2: Priority Ranking of Proposed Functions)

II. Targeted Information and Data

There are two main types of data and information that the portal will provide access to: primary indicators and secondary data/information. *Primary indicators* are numeric, quantitative data which can be extracted, visualized in charts, maps, dynamic reports or dashboard forms on the interactive web. *Secondary data and information* comes from already existing publications, reports, documents, and web services on a given topic. The secondary data and information will continuously grow as the portal reaches out to the community at large. Many of the data sources for primary and secondary data sources can be found in the Appendix 5 – Data Sources.

Apart from these two key types of data and information, the portal will also include community services and community assets (e.g. Palm Beach 211 and AAA databases, transportation networks and infrastructure). All of the information and data will have three dimensions – content, spatial, and temporal. Every piece of data and information will be given a spatial tag and time stamp. This will allow time and geography comparison of indicators. For instance, one will be able to compare the employment growth for a certain region over the past three years , or the number of licensed child care centers and homes for the user-selected area of interest, compared to that of a municipality, county and state.

2.1. Primary Indicators

The Primary Indicators by subject area serves as the building block for portal functions such as interactive mapping, charts and certain elements of dynamic reports. An example of this would be: "number of children born to unwed mothers by age group." This indicator can be mapped for a geographic area, which can be overlaid with locations of children's services facilities, so that the planners or policy makers can identify gaps between services provided and those in demand. Table 6 shows a selected listing of possible primary indicator data sources (See a comprehensive listing in Appendix 6 – Primary Indicators by Subject):

Topic Categories	Examples of indicators	Possible Data Sources
Demographics (Common Indicators)	Population, ethnicity, race, age, gender, labor force, employment status, educational attainment, income, language spoken at home, and modes of transportation	• U S Census Bureau • Simply Maps and its affiliate data partners • NETSTATE.COM • STI PopStats • ESRI Community Data
Basic Need (Food and Housing)	Children Nutrition, reduced lunch application, feeding statistics, WIC Participation, affordable housing, housing units/cost/tenure/occupancy	• U S Census Bureau • Florida DOE Child Nutrition Program CORE Database • Florida Impact • Florida Housing • HUD • Shimberg Center for Housing Studies at UF
Children and Families	From pregnancy to 18 years old, the indicators monitoring social, economic environment, emotional development, health and safety, injuries and violence, learning environment, nutrition, immunization, access to care, insurance coverage, mental health, school behaviors, hospitalizations, accidents, and death	• US Census • Florida DOE • Florida Department of Health • HUD • PB Children Service Council • PB School District • Florida Department of Children and Families • proprietary data sources such as EASI • PB 211 service • University of Florida Institute for Child Health Policy
Education	Student data (demographics, enrollment, courses, test scores, etc.) school data (administrative, finance, faculty/staff)	• National Center for Educational Statistics • Florida K-20 Education Data Warehouse (EDW) • Florida Department of Education • PB School Board

(Table 6 – Primary Indicator Data Categories, Examples and Possible Sources) *Continued on the following page

Topic Categories	Examples of indicators	Possible Data Sources
Economic Development	Employment by gender, race, ethnicity, and trade, wages and payroll. NAIC establishments, unemployment rate, NAIC job creation by quarter, sex, and age, workforce, employment projections, Ad Valorum tax revenue, franchise fees, federal grant expenditures, local business tax, public service tax	• US Census of Economics • Florida Legislative committee on Intergovernmental relations • Florida Chamber • Simply Maps and its affiliated data partners • Florida Agency for Workforce Innovation
Health (including mental health)	Health conditions, health status, mental health status, health habits, health care, birth data, mortality, cause of death, patient data, health providers and services, free clinics, State Health Centers, HPSA, MUA/P	• Florida Health Finder • Simply Maps and its affiliate data partners • Florida Cancer System • Florida Dept. of Children and Families • University of Florida Institute for Child Health Policy • Florida Dept. of Health (CHARTS) • 211 Service Data
Public safety	Crime statistics, Florida uniform crime report, Criminal traffic violations, Domestic violence offices	• U S Dept. of Justice statistics • Florida Dept. of Law Enforcement • Florida Dept. of Highway Safety and Motor Vehicles
Transportation	Congestion, commute time, vehicle miles traveled per capita, transit ridership, and transportation investment	• Simply Maps and its affiliate data partners • Florida Dept. of Transportation • PB MPO • PB GIS
Special Needs (Seniors, Disability, Homeless)	Senior Citizen profiles, Veterans, Homelessness population and persons with Disabilities	• SimplyMap and its affiliate data partners • Florida Housing Data Clearinghouse • US Census • Florida Department of Health, • PB Area Agency on Aging • HUD • EASI

(Table 6 – Primary Indicator Data Categories, Examples and Possible Sources)

While most of the primary indicators are available from federal and state agencies, many of them are from local agencies and organizations. Among them, the Palm Beach County Children Service Council, the PB Area Agency on Aging, the PB 211 services, the PB Health Department, University of Florida Institute for Child Health Policy are five main data owners who can provide significant local primary indicator data which are not easily located in the public web domain. MOAs are required for all of the five main local data sources. The contact information for local agency data is included in Appendix 6 – Primary Indicators by Subject.

2.2. Secondary Data and Information

Secondary data and information includes existing documents such as: annual reports, special studies, existing websites, documents, briefings, research reports, and other formats of publications based on the eleven selected themes described above (See also Appendix 5 – Data Sources). S*econdary data and information* compliments the primary data by providing related materials and data sources for the user to further their research. This information will be compiled and registered in a metadata engine, also known as a Digital Library, to serve different functions of the Portal. Metadata components such as title, organization, funder, author, URL, key words, themes, year of publication, abstract, type of documents, are captured for information retrieval.

The *secondary data and information* will initially be compiled by the project team based upon input from the Target Information Advisory. As the portal grows, the community will start to contribute their sources of secondary data and information back to the portal to enrich the content though the portal's web data publishing tool. A Portal Administrator will be responsible for the coordination of data validation and quality control (See also Section V – Administrative Structure).

2.3. Palm Beach 211, AAA and other Service Databases

The Palm Beach 211 database, which currently does not have an on-line application, is a very important source for community services and assets. These data have the potential to benefit both the community groups (funders, public, and government agencies) in their decision-making and agency planning as well as portal end-users that may be looking for services in their neighborhood. The Palm Beach 211 has agreed to contribute their database to this portal project. The implementation project team will follow through with the 211 services to ensure the incorporation of their data and database structure being incorporate into the portal's database management system. In addition, the Area Agency on Aging (AAA) has a rich database of services for the elderly. Databases of services such as the AAA and the others can be consolidated into one service database. Other service databases include Palm Beach GIS point data layers of landmarks (schools, universities, hospitals, court houses, etc) and Google API of addresses. The Palm Beach 211 database follows a national standard (See also http://www.211taxonomy.org/),

which is the same standard implemented by the Los Angeles based community portal "HealthCity" (See also http://www.healthycity.org/c/service). We recommend implementation the following categories of service data, which are shown in Table 7.

Healthy City (211 LA County)	Palm Beach (selected from 211)
Basic Needs	Basic Needs
Consumer Services	--
Criminal Justice and Legal Services	Abuse/Neglect/Crime; Legal
Education	Education (schools k-12, day care)
Environmental Quality	Environmental quality
Health Care	Health/Medical
Income Support and Employment	Employment
Individual and Family Life	Family, individual and relationship
Mental Health Care and Counseling	Mental Health and Counseling
Organizational/Community/International Service	Organizational/Community/International Service
Nonprofit Financial Data	--
My datasets	--
Special Campaigns	Disaster Response (Hurricane)

(Table 7 - Service categories based upon the 211 taxonomy)

2.4. Supporting GIS Data Layers for Mapping

The Palm Beach Community Indicator Portal will be built upon state-of-the-art interactive mapping and visualization web technology. The GIS data layers will serve as the background and spatial containers for indicators. The Palm Beach County GIS Department is willing to share their GIS data layers with the portal. A list of identified GIS data layers is in Table 8:

Data	Description of purposes	Source
Street network	Serves as background reference maps, as well as programming layer for routing function	Google Streets API; Navteq streets
Aerial Photograph	Serves as background reference maps	Google Maps
Point of Interest	Addresses of major business, government, and community assets	Google address; PB GIS 211 AAA service points (geo-coded)
Census Block Group Boundaries	Serves as data container for Census and ACS datasets	Census Bureau ESRI Census Data
Zip Codes	Serves as data container for Census , Health and other datasets	Census Bureau ESRI Data and Maps
Municipality and Neighborhood	Serves as data container for majority of the primary indicators as well as secondary data and information	Census Bureau ESRI Data and Maps
School Attendance Zones	Serves as data container for education, school and children related indicators	Palm Beach School Board Florida Dept. of Education Palm Beach GIS
Voting District Boundaries	Serves as data container for Census and ACS datasets	Census Bureau

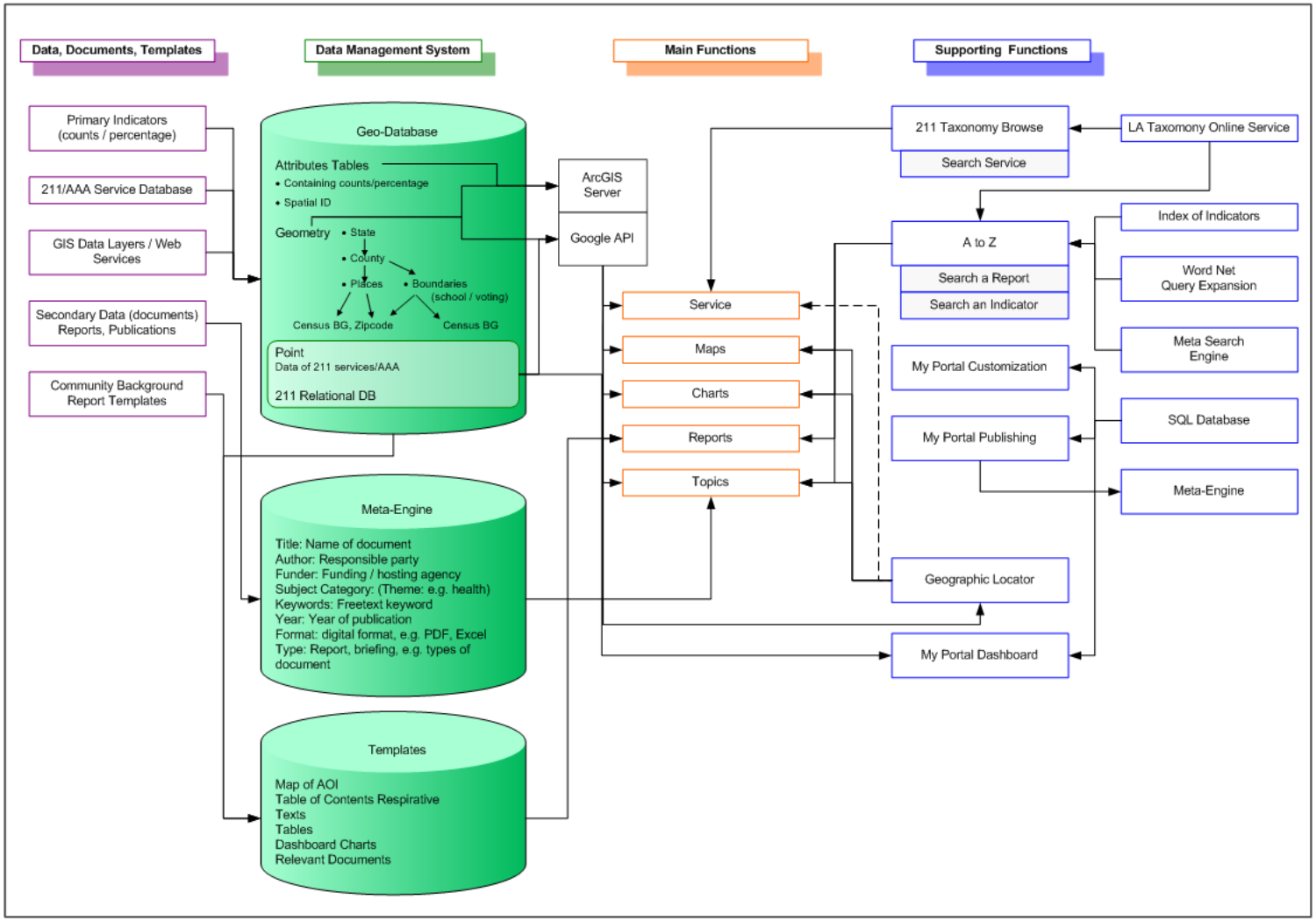
(Table 8 – Supporting GIS Data Layers)

2.5. Data Management Plan

Upon considering the needs identified by both the TIC and the TAC, it is proposed that the portal have three databases that are manage five different types of data and information. Figure 2 depicts how each data set will be stored within each database and how they will be connected to the main and supporting functions.

- The *primary indicators* will be extracted from their originating data sources (e.g. Census, ACS, FDOH) and stored as attribute tables in a geodatabase. These attribute tables will contain a spatial ID, numeric values (percentage and counts) and a time stamp (year). Other tables such as look-up tables will also be stored along with related attribute tables.
- The *GIS data layers* and their geometry will serve as spatial data containers, and will be stored in the geodatabase. Within the geometry, there will be a hierarchy of 1) state, 2) county, 3) municipalities/neighborhood, school and voting districts, 4) census block groups and zip codes. Values can then be aggregated from the bottom of the hierarchy to the top, when needed.
- The *relationship class* which connects the attributes table, look-up table, and geometry layers will also be included. There are three types of relationship classes: 1) one-to-one, 2) one-to-many, 3) many-to-many.
- The 211 and AAA Service Data base and its relationship classes will also be stored in the geodatabase. A geo-coding process will be performed to generate a Point GIS layer for all 211 service locations.
- The *secondary data and information* and/or their metadata will be compiled in a meta-engine. For each selected piece of secondary data and information, the metadata component (title, author, funder/organization, subject category, keywords, year of publication, format of document (e.g. Excel, PDF), type of document (e.g. report, briefing))will be captured by the metadata person/ the portal content administrator. This meta-engine will then feed into the dynamic reports for the relevant documents and URLs.
- There will be a set of compiled *community background report templates,* which will capture the:
    - ✓ Geography boundary of the reports (e.g. municipality or neighborhood);
    - ✓ Table of contents;
    - ✓ Descriptive information such as community history or dynamics, or explanatory text such as key health indicators and what they represent;
    - ✓ Tables that will depict comparison across geographies and/or time;
    - ✓ Dashboard charts; and
    - ✓ Relevant documents/URLS which can be filtered through a search parameter of the metadata engine.

Figure 3 shows the database management systems with each database component and their supporting functions.



(Figure 3 – Diagram of Data, Data Management System, and the main and supporting Functions)

2.6. Phased Plan for Data Publishing on the Portal

The Portal will focus on serving the general purpose primary indicators in the phase I of the project (see also section IV – Portal Implementation and Timeline), and enrichment of portal content with particularly primary indicators of 8 community topics/themes for the purposes of **maps, charts, reports,** and possibly **dashboard** functions. The following table shows the timeline of the data publishing and update frequency for each category:

Data/Information	TimeLine	Update frequency
Primary Indicators (Common Indicators) including population, ethnicity, race, age, gender, labor force, employment status, educational attainment, income, language spoken at home, and modes of transportation	Phase I	Annually
211, AAA, and Palm Beach GIS service databases	Phase I	Annually
Secondary information and URLs (See also Appendix 5 – data sources)	Phase I	Quarterly
Supporting **GIS data layers**	Phase I	Annually
40 Municipality and Neighborhood report templates – General report	Phase I	Annually
Primary Indicators with data for 8 themes (Including local data datasets)	Phase II	Annually
40x 8 Templates and programming for Dynamic Reports by 8 themes (e.g. children, health, economy)	Phase II	Annually
Secondary information and URLs to be continuously suggested, contributed, quality-controlled and published onto the portal	Phase II	Quarterly

(Table 9 – Data publishing time line and update)

2.7. Decision Making Process for Data Selection

For data sets outside the initial recommended scope (see also Appendix 5 – data sources, and Appendix 6 – Primary Indicator by Subject), or additional services databases other than 211 and AAA services, and PB GIS service data layers, we recommend the following decision making process:

1) When a primary data source or data base be recommended by an individual, the Project Director or Portal Administrator (in post-implementation years) will review the format and validity of the datasets in consultation with the Data Team and the relevant TIC members. For instance, a dataset on homelessness would be reviewed by TIC members from Homeless Coalition and PB County Division of Human Services. Recommendations and associated cost of incorporating additional primary data indicators will then be presented to the Funders for the final approval.

2) The secondary data and information can be contributed via My Portal publishing. A registered individual can submitted the metadata (e.g. information about the documents, reports, or URLs) through an on-line metadata and data uploading mechanism (See also section III – Portal Functionalities). The Portal Administrator will then perform quality control over the metadata submitted, as well as the relevance of the information submitted in consultation with relevant TIC members. As there are little cost involved in secondary information inclusion, and the portal's search engine rely upon the public participation, secondary data and information is encouraged and the process should be relatively straight-forward.

3) Major changes and additions in forms of GIS data layers and report templates need to be presented by the project technical and data team, approved by the project director in consultation with TIC members and the Funders.

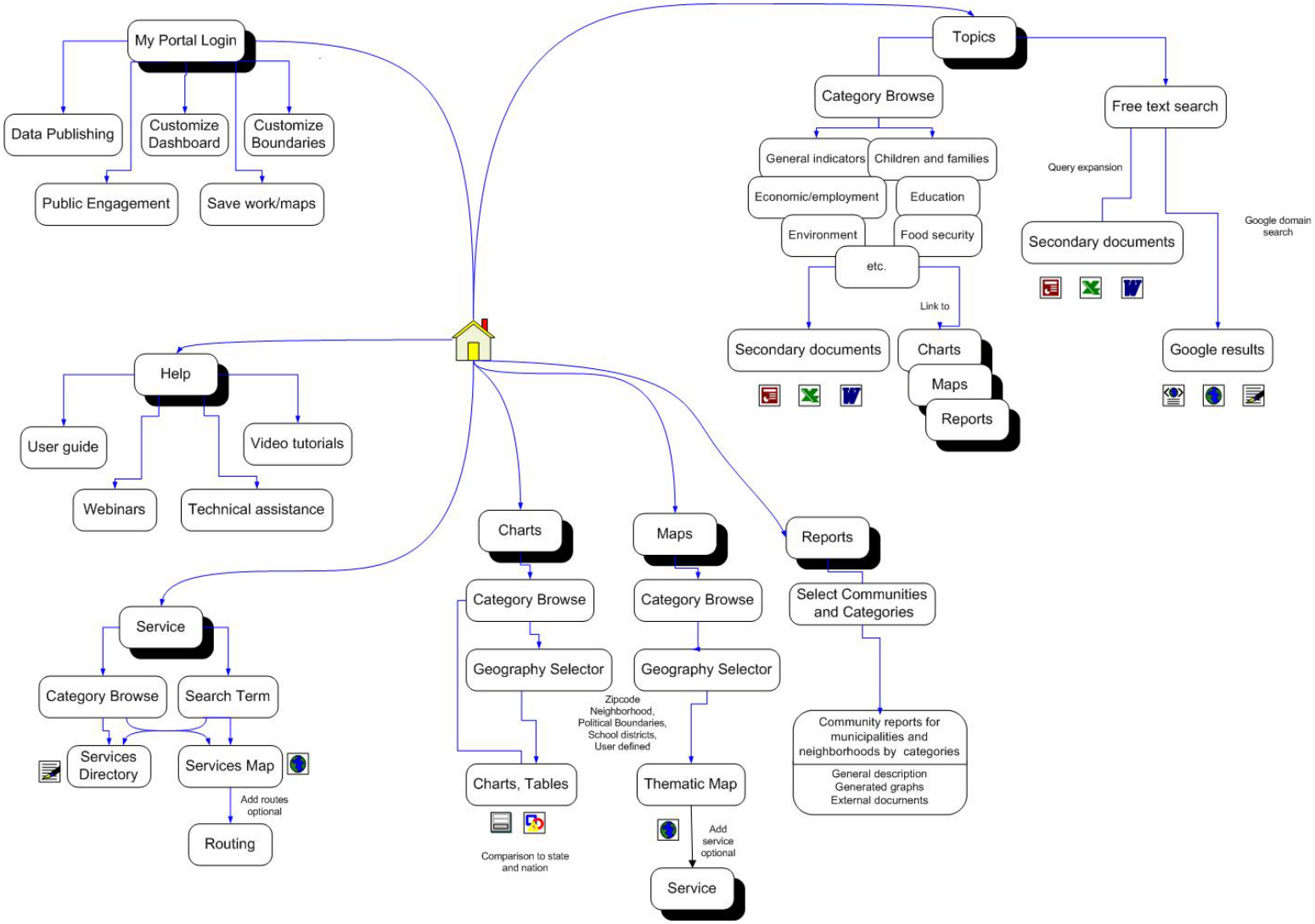
For any major new addition of the data updates and changes, the portal will announce the changes via two main venues a) Portal's Main Home page; 2) email listing of user groups.

III. Portal Sitemap and Functionalities

The four core functionalities include **Services**, **Charts, Maps** and **Reports**. The other functions are **Topics**, **My Portal**, and **Help**. The main functions provide a platform to best serve the primary indicators as well as the secondary data and information. Examples of function navigation and usage can be found in Appendix 7 – Portal Function Navigation and Usage.

Table 10, portal site maps shows the main functions and its affiliated sub-functions. Required and Optional sub-functions are marked based upon the evaluation ranking performed by focus groups. As recommended in the first iteration of the portal implementation, all of the required functions should be implemented.

A sitemap that depicts the portal's main functions and its navigation flow is shown in Figure 4:



(Figure 4 -- Sitemap of the Palm Beach Community Indicator Portal)

Functions	Sub-functions	Description
SERVICES	Category Browse for Service (211 taxonomy) **(Optional)**	A *Content Navigation Aid* built upon 211 taxonomy standards.
	Search for Services (free text) **(Required)**	A *Content Navigation Aid* built upon indexing of name and description of services provided by Palm Beach 211 service and AAA databases
	Service Directory **(Required)**	*Information Display* that allows printing and saving a list of identified services
	Service Map **(Required)**	*Spatial Navigation Aid and Visualization* built upon Google Maps API and Palm Beach 211 service and AAA databases
	Service Maps + Route **(Optional)**	*Information Display and Visualization* built upon Google Maps API, Street networks of Palm Beach, and Palm Beach 211 service and AAA databases
CHARTS	Category Browse by Portal themes/category (e.g. Children, Health) **(Required)**	*Content Navigation Aid* built upon indexes and catalogs of primary indicators hosted in the portal Geo-database
	Geography Selector for Charts **(Required)**	*Spatial Navigation Aid* built upon PB County GIS Layers and ArcGIS server or equivalent platform
	Charts/Tables **(Required)**	*Data Visualization and Information Display* built upon primary indicators hosted in the portal Geo-database
	Charts/Tables + Comparison **(Optional)**	*Advanced Data Visualization, Information Display, and Analysis* built upon primary indicators hosted in the portal Geo-database
MAPS	Category Browse by Portal themes/category (e.g. Children, Health) **(Required)**	*Content Navigation Aid* built upon indexes and catalogs of primary indicators hosted in the portal Geo-database
	Geography Selector **(Required)**	*Spatial Navigation Aid* built upon PB County GIS Layers and ArcGIS server or equivalent platform
	Thematic Maps **(Required)**	*Data Visualization and Information Display* built upon primary indicators hosted in the portal Geo-database, PB County GIS Layers , ArcGIS server

		and Google Maps API
	Thematic Maps + Services **(Required)**	*Data Visualization, Information Display, and Analysis* built upon primary indicators hosted in the portal Geo-database, Palm Beach 211 service and AAA databases, PB County GIS Layers , ArcGIS server and Google Maps API
	Thematic Maps + Comparison **(Optional)**	*Advanced Data Visualization, Information Display, and Analysis* built upon primary indicators hosted in the portal Geo-database, PB County GIS Layers , ArcGIS server and Google Maps API
REPORTS	Category Browse by Portal themes/category (e.g. Children, Health) **(Required)**	*Content Navigation Aid* built upon metadata engine of secondary data and information
	Browse by Geographies **(Required)**	*Spatial Navigation Aid* built upon PB County GIS Layers , ArcGIS server and Google Maps API
	Dynamic Community Reports (Generic) **(Required)**	*Comprehensive Reporting* built upon primary indicators hosted in the portal Geo-database, Palm Beach 211 service and AAA databases, PB County GIS Layers , ArcGIS server, Google Maps API, and metadata engine of secondary data and information.
	Dynamic Community Reports (By Subject/Geography) **(Optional)**	*Comprehensive Reporting* built upon primary indicators hosted in the portal Geo-database, Palm Beach 211 service and AAA databases, PB County GIS Layers , ArcGIS server, Google Maps API, and metadata engine of secondary data and information.
TOPICS	Category Browse by Portal themes/category (e.g. Children, Health) **(Optional)**	*Content Navigation Aid* built upon primary indicators hosted in the portal Geo-database, Palm Beach 211 service and AAA databases, PB County GIS Layers , and metadata engine of secondary data and information.
	Free Text Search **(Required)**	*Content Navigation Aid* built upon metadata engine of secondary data and information and query expansion; and the data sources (e.g. URL)

		compiled and Google search engine
	Google Domain Search **(Required)**	*Content Navigation Aid* built upon the data sources (e.g. URL) compiled and Google search engine
	Digital Library for Secondary Documents **(Required)**	*Content Navigation Aid* built upon metadata engine of secondary data and information
	Digital Library for Secondary Documents + Query Expansion **(Optional)**	*Advanced Content Navigation Aid* built upon metadata engine of secondary data and information and query expansion
	Filter Charts/Maps/Reports by Topic **(Optional)**	*Advanced Content Navigation Aid* built upon primary indicators hosted in the portal Geo-database, Palm Beach 211 service and AAA databases, PB County GIS Layers and metadata engine of secondary data
MY PORTAL (LOGIN)	My Portal Data Publishing **(Optional)**	*Data and information input and upload*
	Customize your own Dashboard **(Optional)**	*Advanced Data Visualization, Information Display, and Analysis,* built upon primary indicators hosted in the portal Geo-database, prediction models and benchmarks
	Create and Save Custom Boundaries **(Optional)**	*Advance Spatial Navigation Aid and Data output and Storage Aid* built upon PB County GIS Layers , ArcGIS server and Google Maps API
	Public Engagement/Private Sharing Mechanism **(Optional)**	*Web Communication Aid*
	Save Work/Maps **(Optional)**	*Data output and Storage Aid*
HELP	User Guide (PDF) **(Required)**	*Learning Aid*
	Video Tutorials **(Required)**	*Learning Aid*
	Webinars **(Optional)**	*Interactive Learning Aid*
	Customized Hands-on Technical Assistance **(Optional)**	*Interactive Learning Aid*

(Table 10: Portal functions and description)

IV. Portal Implementation Timeline and Cost

It is recommended that the Community Indicator Portal be implemented in two phases:

Phase I: Basic Framework—targets the development of the basic framework of the portal including the development of the web structure and tools, basic data compilation, and organization.

Phase II: Advanced Development and Data Enrichment—focuses on the development of the remaining supporting tools, primary indicators by 8 themes, and composition of the detailed report template.

4.1 Phase I – Portal Infrastructure , Generic Data and Information Inclusion (1.5 years duration)

The main focus of Phase I is to create a portal infrastructure which includes the development of all main functions proposed in the sitemap. The main functions, including **Services, Charts, Maps, Reports,** and **Integrated Search,** should be fully developed and tested. Generic demographic data indicators including population, ethnicity, race, age, gender, labor force, employment status, educational attainment, income, language spoken at home, and modes of transportation will be included in the indicators that support data retrieval and visualization tools such as **Maps, Charts**, and **Reports**. The 211 databases and AAA database of community service locations and contacts will be geo-coded and converted to support the function of **Services.** Secondary data and information will be cataloged in a metadata engine, and a key word search for these data and information will be made available. The Integrated **Search** will entail a combination of search based upon metadata catalog, Google customized search, and search query expansion. Each tool will be developed, tested and evaluated by focus groups before it is released to the public. The detailed evaluation and testing plan is illustrated in Section V. The anticipated deliverable of the Phase I is a web portal in its full production with 5 main functions and generic community data indicators, community services locations, and a search mechanism for both primary and secondary data and information. Help tutorials in PDF and on-line video format will be produced for each of the main functionalities.

4.2 Phase II – Portal Content Enrichment and Advanced Tools (1.5 years duration)

The Main focus of Phase II is enrichment of portal content via the expansion of the primary indicators and secondary data and information to 8 recommended community topic themes—Children and Family, Health, Education, Basic Needs, Economy/Employment, Public Safety, Special

Needs, and Transportation. The Primary indicators for all 8 of the community topics/themes will be carefully selected in consultation with the Targeted Information Committee and the funders. Templates onto which the dynamic reports for all 8 themes will be generated will be available for all municipalities, major neighborhoods (e.g. homeowner associations, corridors, etc) and the unincorporated county.

In addition, a customized dashboard, search filter by topics, 211 Taxonomy Browse, A to Z index, portal publishing tools will also be included in Phase II. Continued efforts in testing and evaluation, additional workshops, on-line training and how-to's are recommended for the Phase II. The anticipated deliverable of Phase II is a content rich community information portal that not only has state-of-the-art technological tools for data visualization, but also contains *unique local data sources* that are not available in the public domain.

Table 11 shows a detailed budget menu for the two phases broken down by costs for data compilation, processing and database design, programming and development of web interactive tools, project administration and coordination among the project team, the funders, the focus groups and IT maintenance. An estimation of on-going cost beyond the funding period for each task is also included.

Tasks	Data Processing & Design	Programming Development	Project Coordination/ Outreach	IT	Total
Geographic Locator supports all core functions (Phase I--Required)	14,500	15,000	500	500	30,500
Services 211+ AAA (Phase I--Required)	10,000	20,000	7,000	500	37,500
Generic Data Indicators for Charts, Maps and Reports (Phase I--Required)	30,000	28,000	10,500	1,500	70,000
Generic Reports templates and programming (Phase I--Required)	40,000	15,000	10,000	1,000	66,000
Integrated Search supporting all 5 main functions on the sitemap (Phase I – Required)	5,000	14,000	1,500	500	21,000
Help PDF User Guide, Video Tutorials	0	1,500	1,500	0	3,000
Utilization Evaluation	0	1,500	4,500	0	6,000
Phase I Total	**99,500**	**95,000**	**35,500**	**4,000**	**234,000**

(Table 11 –Detailed Budget for Implementation and on-going Cost) *Continued on the following page

Tasks	Data Processing & Design	Programming Development	Project Coordination/ Outreach	IT	Total
Indicators with data for 8 themes (Including local data such as CSC datasets)	70,000	25,000	1,500	1,000	97,500
Templates and programming for Reports by 8 themes (e.g. children, health, economy)	100,000	50,000	20,000	5,000	175,000
Filter for Topics	0	7,000	1,000	500	9,000
211 Taxonomy browse and A to Z Index (Phase II)	1,000	5,000	600	500	7,100
My Portal data publishing (Phase II)	0	3,000	5,000	1,000	9,000
My Portal Customization Dashboard (Phase II)	20,000	20,000	5,000	1000	46,000
Help Webinar, TA (Phase II)	5,000	15,000	1,000	500	21,500
Utilization Evaluation	0	1,500	4,500	0	6,000
Portal Marketing and business plan implementation	3,000	2,000	25,000	0	30,000
Phase II Total	**199,000**	**128,500**	**63,600**	**9,500**	**400,600**

(Table 11 –Detailed Budget for Implementation and on-going Cost) *Continued on the following page*

Tasks	Data Processing & Design	Programming Development	Project Coordination/ Outreach	IT	Total
Phase I Total	99,500	95,000	35,500	4,000	234,000
Phase II Total	199,000	128,500	63,600	9,500	400,600
Grand Total for two Phases	**295,500**	**223,500**	**99,100**	**13,500**	**634,600**

(Table 11 –Detailed Budget for Implementation and on-going Cost)

The total cost for data processing and design is $295,500. This number covers costs for personnel of the data team (see also section 5 – portal administration), and necessary data purchase. The total cost for web development and programming is $223,500. This covers primarily the cost for the personnel of the technical team. The total cost of $99,100 covers the personnel cost for project coordination and management. For year 3, a total of $30,000 is recommended to cover the cost of a part-time portal content administrator and for the start of marketing efforts and implementation of a portal business plan, which will lay the groundwork for generating the revenue needed to sustain the portal. The IT cost for the 3 years is estimated at $13,500, which covers the lease of the IT infrastructure illustrated in Section 5 needed for hosting the portal. In summary, the total for the 3-year project is estimated to be **$634,600**.

An alternative of the budget which is scaled down to **$340,500** is included in Appendix 10 – Alternative Budget, which the My portal customization – dashboard, A to Z and Taxonomy Browse, Primary indicators from local agency collection, dynamic report of 8 themes are taken out. This alternative will still promise a portal with functions similar to those of HealthyCity. This alternative will provide rich primary indicators from federal and state data sources, as well as robust collection of secondary data and information.

A breakdown of budget by personnel for the implementation phase is as follow:

Breakdown by category for 3-year development/implementation	Phase I (1.5 years)	Phase II (1.5 years)	Total
FTEs for Data Team	1600 hours @ $50 per hour = 80,000	3200 hours @ $50 per hour = 160,000	4800 hours@50 per hour=240,000
FTEs for Technical Team	1600 hours @ $50 per hour = 80,000	2200 hours @ $50 per hour = 110,000	3800 hours @50 per hour = 190,000
FTEs for Outreach Team	412.5 hours @40 per hour = 16,500	1690 hours @ $40 per hour = 67,600	2103 hours @ 40 per hour = 84,100
FTEs for Project Director	317 hours @ $60 per hour = 19,000	317 hours @ $60 per hour = 19,000	634 hours@60 per hour = 38,000
IT	4,000	9,500	13,500
Other cost (materials, travel, administrative overhead – office, computer, electricity, etc.)	34,500	34,500	69,000
Total	**234,000**	**400,600**	**634,600**

(Table 12 - Breakdown of budget by personnel for the implementation phase)

After the three year period of development and implementation, the post development and implementation cost for 2 years is shown in Table 13:

Tasks Breakdown	Responsible Parties	Year 1 (From the completion of the development)	Year 2 (From the completion of the development)
Update and Maintenance for Primary Indicators (including subscription)	Portal administrator & Assistant, Project Team	17,500	17,500
Addition and Quality-control for Secondary Information	Portal Administrator and Assistant	5,000	5,000
IT Maintenance	Hosting Institution and/or project team	5,000	5,000
Technology Upgrade	Project Team	NA	NA
Marketing/Advertisement (see VI portal utilization)	Portal Administrator & Assistant	35,000	30,000
Training (Community workshops, Webinars, TA) (including 4 community workshops, 6 Webinars)	Portal administrator, Assistant, and Project Team	16,000	21,000
Development of Grants	Portal Administrator, Project Director, Funders	20,000	20,000
Coordination of Contracts	Portal Administrator, Project Director, Funders	16,000	16,000
Subscription and Membership (optional)	Portal Administrator and Assistant	11,000	11,000
Other Cost (materials, travel, administrative overhead – office, computer, electricity, etc.)		12,550	12,550
Total		138,050	138,050
2-year total			**276,100**

(Table 13 – Post Implementation and Implementation Cost)

Breakdown by Category for 2-Year Post-Development	Annual Cost	2-year total
Personnel for Portal Administration	1 FTE @ $70,000 annually	140,000
Personnel for Portal Assistant	1 FET @ $45,000 annually	90,000
IT Maintenance (hosting institution)	5,000	10,000
FTEs for Project Director	92 hours @ 60 per hour = 5,500	11,000
FTEs for Project Team	100 hours @50 per hour = 5,000	10,000
Other Cost (10% of direct project cost)	12,550	25,100
Total	**138,050**	**276,100**

(Table 14 – Post Development Costs by Category)

We anticipate that all or a large portion of the on-going annual cost of $125,500 can be covered by revenue-generating business models discussed in Section VII.

A timeline for the 3-year project is shown in Table 15:

Task/Month	1	2	3	4	5	6	7	8	9	10	11	12
Year 1												
Geographic Locator												
Services												
Maps and **Charts** (Generic)												
Dynamic **Reports** (Generic)												
Integrated Search												
Year 2												
Maps and **Charts** (advanced tools)												
Maps and **Charts** (8 theme indicators)												
Dynamic Reports (4 themes)												
My Portal Customization of **Dashboard**												
211 Taxonomy browse and search												
My Portal data **Publishing**												
Usability Evaluation												
Year 3												
Dynamic Reports (4 themes)												
Marketing and Business Plan Implementation												
Usability Evaluation												
Year 1 to 3 outreach and meeting schedule												
Meetings with interest groups and community												
Workshops for TIC and Funders												

(Table 15- Three-year time line for the portal development)

V. Administrative Structure

5.1 IT Administration

Due to the multiple interactive tools such as mapping, charting, dashboard, dynamic reporting, the IT system required to support such intricate web development and hosting can also be very complex. The Annual Maintenance cost for a complex IT infrastructure such as that given below is at a minimum of $5,000 per year. The bidders would either have the server capacity to operate such a system, or demonstrate that they will rent a space in such a comparable system. This is the minimum requirement of an IT system that has the capacity to host such a complex web portal.

The IT hosting environment for a portal of such scale requires multiple layers of server structure. The following focus on the infrastructure of such a setting. Specifications and associated hardware and software costs are included in the tables given below:

IT Environment	Application Servers	Database server	File Server	Reverse Proxy
Development	**Single server** installation: Dell PowerEdge T105 or equivalent ($400-$900). All components can be installed on one server. *(optionally virtualized)*			
Testing	**One server** that virtualizes a scaled down version of all production server roles ($8,000-$16,000)			
Production	**Web Servers:** Initially, two load balanced web servers. ($16,000-$24,000) *(optionally virtualized)* **Map Servers:** Initially, two ArcGIS server nodes with server object model (SOM) and server object containers (SOC) installed on both ArcGIS nodes. ($20,000-32,000) *(Not Virtualized)*	Two servers on a failover cluster. ($20,000-32,000) *(optionally virtualized)*	Two servers on a failover cluster. ($16,000-$24,000) *(optionally virtualized)*	Two servers on a failover cluster. ($10,000-$20,000) *(optionally virtualized)*

(Table 16 - IT Hosting Specifications)

5.1.1 Hardware Requirements:

A mature IT hosting environment needs to have three sets of hardware and software configurations for different aspects of IT infrastructure – 1) Development environment, where programmers and the data team can develop prototypes of the portal functions; 2) Testing environment, where prototypes can be tested at a smaller scale, in a smaller network environment to which users do not have access ; 3) Production environment, where finished functionalities will perform on real data (as oppose to test data) on a publicly accessible network. Only the production environment needs to have four segregated layers: application, database, file servers and reverse proxy.

5.1.1.1 Application Servers:

The application servers are sets of hardware where main applications such as ESRI's ArcGIS Servers reside. This is a leading application in the industry for web interactive mapping development. Used with Google API and JavaScript language, it can allow customization of various interactive interfaces which enables main functions such as Services, Charts, Maps and Dynamic Reports proposed in section III – portal sitemap and functionalities. The minimum hardware requirement for such an environment is shown as follows:

Component	Minimum Requirement
Processor	64-bit, 4 cores
RAM	8 GB for multiple server farm installation 16GB for single installation
Hard disk	100 GB on system drive

Production Web Server Node: The production web server node is a set of hardware and software configured to provide data output for the web users. The minimum hardware requirement for such an environment is shown as follows:

Component	Minimum Requirement
Processor	64-bit, 4 cores
RAM	4 GB for multiple server farm installation 8 GB for single installation
Hard disk	80 GB on system drive

5.1.1.2 Database Servers:

The Production Database Server Node is a set of hardware and software configured to host large volumes of data and its relationships. An enterprise level database management system such as Oracle or MS SQL is recommended. The minimum hardware requirement for such an environment is shown as follows:

Component	Minimum Requirement
Processor	64-bit, 4 cores
RAM	16 GB
Hard disk	100 GB on system drive

5.1.1.3 File Servers:

The Production File Server Node is a set of hardware and software configured to storage files for downloading and uploading. The minimum hardware requirement for such an environment is shown as follows:

Component	Minimum Requirement
Processor	64-bit, 4 cores
RAM	8 GB
Hard disk	80 GB on system drive

5.1.1.4 Reverse Proxy Servers:

Production Reverse Proxy Server Node exists for many reasons, namely: 1) load distribution among servers, 2) security, 3) compression, 4) encryption, and 5) caching. Overall, it's crucial for stabilization of web portal performances. The minimum hardware requirement for such an environment is shown as follow:

Component	Minimum Requirement
Processor	4 cores
RAM	4 GB
Hard disk	80 GB on system drive

5.1.2 Production Environment Scalability

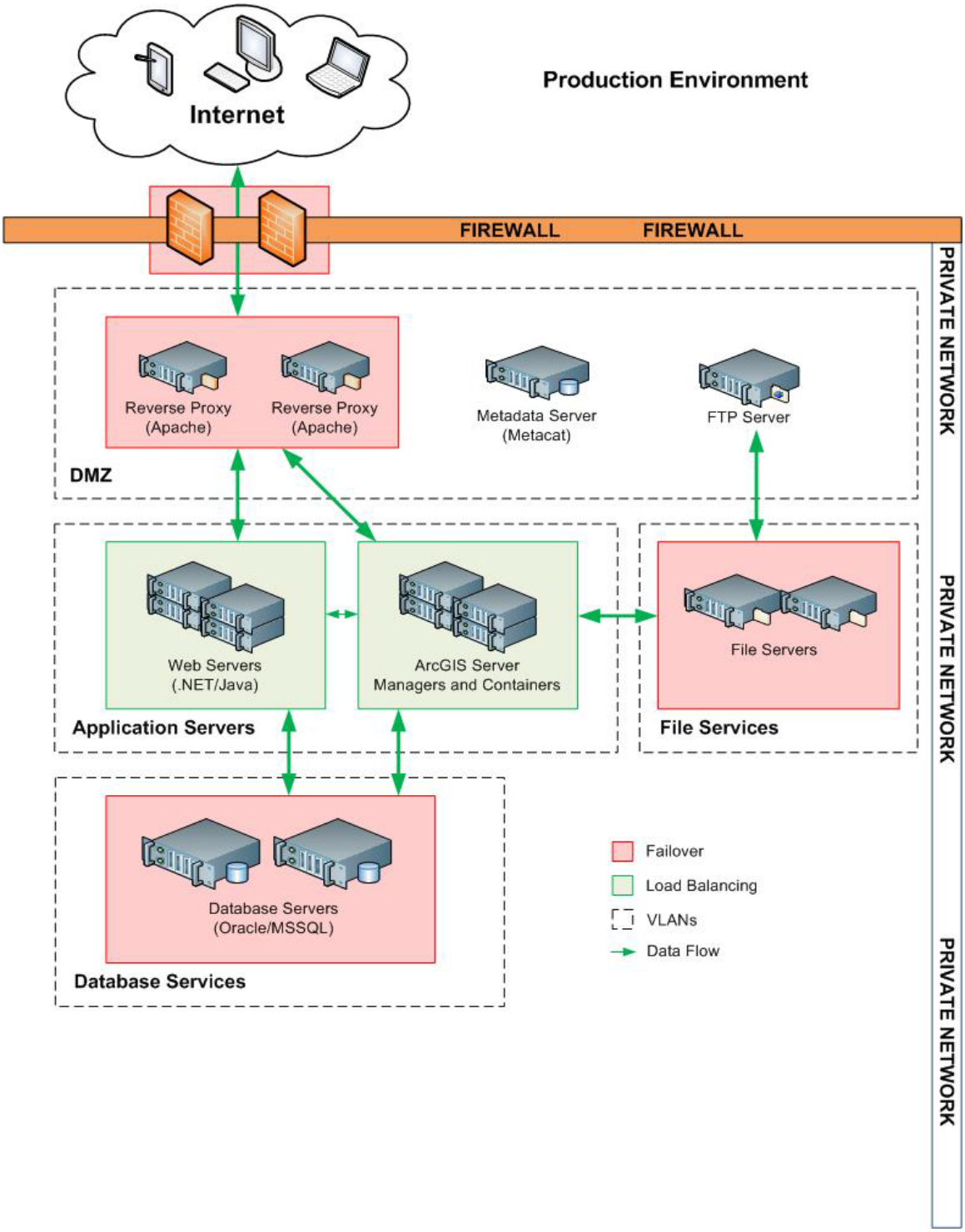
A scalable architecture is desired so that it may be possible to meet increasing demand, future growth and expansion by server multiplication. Since initial demand should be low, only two servers for each role will be necessary at the outset. When user processing needs start to grow and servers near their limits, more servers may be added to the group to meet peak load projections.

Servers in load balanced clusters and high availability failovers will help keep services running at all times.

5.1.3 Virtualization

Preferably, ArcGIS server will not be virtualized in the production environment because of the significant performance hit. However, virtualization may be useful for some of the other roles within the production environment or for testing, development and QA environments.

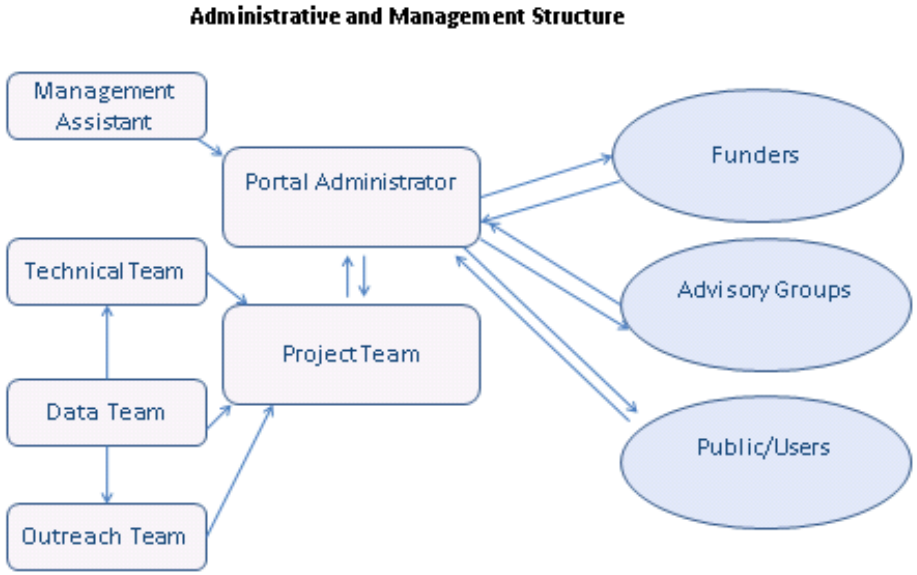
An illustration of the production environment for a mature IT environment is illustrated as follow in Figure 4 – IT Production Environment:



(Figure 4 – IT Hosting Production Environment)

5.2 Portal Administration and Management

The portal will be managed by two key groups – portal management personnel, which includes a portal administrator and an administrative Assistant, and a project team, which is composed of technical, data and outreach teams. The project team will be led by the Project Director in both implementation phase and post-implementation years. These two groups will interact through the portal administrator with the funders, the advisory groups (e.g. Targeted Information Advisory, and Technical Advisory Committee), and the public users to collect feedback, make enhancement in its future iterations, enrich the content of the portal and advertise the portal to the public and users (see Figure 5).



(Figure 5 – Portal Administrative Structure The administrative structure is based upon our discussion with Healthy City, Social Compact, FIU HPDRC Center's business model, and FIU GIS Center's project experiences)

5.2.1 Portal Management Personnel

We recommend two phases of the portal development and estimate a 3-year project implementation timeline. Year 1 and 2 will focus on developing the basic community information that will benefit all interest groups. Year 2 and 3 will focus on enriching and populating the portal with subject specific indicators and reports. A Portal Administrator (PA) needs to be in place throughout the entire 3 years of project implementation and beyond the project funding period. In the first two years of the portal implementation, this role can be absorbed by the Principle Investigator, or the Project Director for portal implementation. During the 3rd year of the portal implementation, a part-time portal administrator needs to be hired and trained to step into the leadership role. The Project Director will continue to work with the Portal Administrator in the post-implementation years on maintenance and make recommendations for future iterations and improvements. However, during the post-implementation years, the Portal Administrator will be the main leader and serve the role of project management and coordination, content management of the portal, as well as implementation of revenue-generating business models to sustain the portal's growth.

The Project Director is expected to continue his/her employment beyond the 3-year funding period. He/she will work closely with the project team and the Portal Administrator who will ensure that data and information is updated periodically, provide quality control for documents and publications contributed via My Portal Publishing tool, and will actively acquire and recommend appropriate new content and functionality adjustments and enhancements to the project team. More importantly, the Portal Administrator will play a key role in the implementation of business models to ensure the continued growth of the portal. He/she will participate in proposal development, seek contracts and manage sponsorship and membership systems. Based upon all the important roles the PA will play, we recommend a senior level professional with advanced degrees in social science or urban planning, or equivalent educational background, as well as a minimum of 3 years of professional working experience in web project management. In addition, we recommend that an junior level personnel be hired as a portal assistant. The portal assistant will work with the PA to provide accounting and administrative assistance, particularly after year 3 of the project.

After the 3-year funding period ends, we recommend the total annual cost of $110,500 (See also Section 4, Budget and Timeline) for these key personnel be absorbed between partial funding from the funders, and its continued revenue generating business models. As the portal becomes successful and widely utilized by the community, it is anticipated that the cost can be mostly absorbed by the revenues generated via its business model (see also section 6).

In addition, it will be essential to continually engage the Targeted Information Advisory (TIC) focus group throughout the entire project implementation period and beyond. The Project Director and /or Portal Administrator will assume the responsibility of scheduling meetings with the project team, funders, and the advisory groups, organizing workshops, and working with the project team on disseminating information about the progress of the project , collecting feedback, and conducting the portal usability tests and evaluation.

5.2.2 Project Team Composition

To implement this proposed portal successfully, an ideal project team and/or its subcontractors needs to reflect expertise in the following areas:

Project Director should have demonstrated a history of leadership skills and experiences in project coordination and management, portal development, community outreach and training, budget management and fund raising. This person will dedicate 634 hours during the project implementation years, roughly 1 day per week for managing this project. He or she will be supervising the project teams, communicating with the funders and focus groups in acquiring data, generate workflows for the project team, and making sure deadlines are met. (S)he will also be responsible for organizing meetings and workshops, writing technical progress reports, and managing the project budget. During the post-implementation years the Project Director will step down as the main leader for the project, but will contribute 92 hours annually for project consultation and facilitation of communication between the project team and the Portal Administrator.

Technical Team should have demonstrated experiences in JavaScript programming, web design, web content management system (CMS), ArcGIS server configuration and development, Google API mesh-up, Web 2.0 technology, geo-database (e.g. ESRI's Spatial Data Engine), query expansion, and Arc GIS desktop or other equivalent GIS programs. The *Technical Team* is responsible for the development and programming of the proposed web tools and functionalities, the design of the portal databases, the IT maintenance of these databases, and the configuration of the web IT hosting environment for the portal. Total FTEs calculated in hours for the technical team during the 3-year project implementation is 3,800.

Data Team should have experiences in statistical, numeric, and geo-spatial data compilation, conversion and aggregation, GIS desktop programs, Microsoft Office suite, database management programs, and Spatial Data Engine (SDE). It should also demonstrate expertise and understanding in urban planning and community topics such as health and children. The Data Team will work with the Targeted Information Committee (TIC) closely to identify relevant data indicators and sources, to conduct data compilation and conversion and to populate the portal databases

designed by the *Technical Team*. Furthermore, the data team is also responsible for compilation and creation of the generic and thematic templates for dynamic reports. Total FTEs calculated in hours for the data team during the 3-year project implementation is 4,800.

Outreach Team should have experience in marketing, training workshops, coordination of meetings, advertisement, and information dissemination. *Outreach Team* will be responsible for the development of the user guides, preparation of training workshops, collecting feedback, designing and conducting of usability testing, and evaluation of the portal functions. Total FTEs calculated in hours for the outreach team during the 3-year project implementation is 2103.

All three teams and the portal management staff will report to the Project Director of the project team in the three year project period and during the post-developmental years. A total of 100 hours of the project team will be dedicated for project maintenance during the post-developmental years.

VI. Utilization Strategies -Outreach, Marketing, and Training

A community portal is a two-way relationship between the portal creators and administrators charged with centralizing reliable data in a user-friendly format and the end user that keeps the portal vibrant through its frequent usage. While the bulk of this report focuses on the details of developing a portal, it is also important to have utilization strategies in place that will help to increase and maintain portal usage over time. This section is divided into three parts: outreach, marketing, and training; each section will provide ideas that can help create a community of vibrant portal users.

6.1 Outreach

For the purpose of this report, outreach strategies are defined as actions that the portal administration can undertake to engage individuals and organizations for 1) enlisting support for the portal and 2) asking for feedback regarding the portal.

1) It is important to have a *dedicated staff* whose job description includes partnership and coalition building responsibilities. Examples of specific outreach activities include, but are not limited to:

- Meet with funders three times per year throughout the project development of the portal to report and receive focused feedback on progress;
- Responsible for conducting outreach and building partnerships with key stakeholders and coordinate and convene these partnership/stakeholder in regular meetings and for other project activities;
- Serve as liaison between stakeholder organizations working with the Portal; and
- Conduct focus groups and design and distribute questionnaires (these activities are further described below).

2) *Focus Groups* can provide valuable opinions, criticism and suggestions concerning the user's experience with the Portal. It is important to routinely organize focus groups as elements of the portal are implemented and as new data and features are added to the site. Specifically, focus groups can provide feedback regarding the navigation of the site and the usefulness of the portal to support their research and data needs. Focus group participants who have used the website on a regular basis are preferred; the groups can also be organized by user-type (e.g. governmental, philanthropic, community-based organizations).

3) The Portal should develop an *on-line questionnaire* targeting the different information consumer groups (e.g. policy makers, funders, non-profits, grassroots community organizers, grant writers, program planners, researchers, and the general public), to receive continuous feedback and suggestions for improvement of the portal content and functionality.

6.2 Marketing

Despite the tremendous effort to plan and develop a portal, its true success can only be measured by the vibrancy of it use. Ideally, an effective marketing strategy will bring new users to the portal and effective portal planning, implementation, and continued outreach to refine the portal will keep it vibrant. The following outlines a few key ideas that should be taken into consideration when developing a marketing campaign:

1) Invest in a *professional marketing campaign* that includes developing a brand and a multi-media (print, web, and other materials) communication strategy. Aspects of this marketing strategy should include:

- A new name for the portal that succinctly describes its mission and is memorable. Keep in mind that the portal's name will appear on all the collateral (therefore, the shorter the better) and will inform the web address (the easier to remember the name, the better).
- Develop a logo and collateral that echoes the look and feel of the portal. Consider developing a video as part of the collateral that can briefly communicate the portal's mission and uses; this video can be embedded on partner's web sites (e.g. HealthyCity example: http://www.youtube.com/watch?v=pTBh4Le5nwo and/or http://vimeo.com/9161961.
- Consider hiring a professional marketing and design company that specializes in non-profits and community-driven campaigns (e.g. http://www.freerangestudios.com/ or for videos: http://thoughtbubble.org).

2) In addition to the traditional marketing strategies mentioned above, *public engagement activities* can also provide marketing opportunities with multiple benefits: market to and educate the public about the portal and create opportunities for contacting potential new users and strategic partners. Thus, the best marketing opportunity may be simply demonstrating the portal's value to various types of users; the demonstrations should take into consideration the needs of each group and the presentation should be customized accordingly. Networks established for public engagement efforts can also be used for marketing interactive technical assistance and training opportunities as will be discussed in the following section.

- ***Local Government***: The County and its 38 municipalities are important partners as potential contributors of data, but also as vibrant end-users of the portal for informed policymaking and planning purposes. The most efficient avenue to engage local government may be through the Palm Beach League of Cities. Another idea may be to engage local government by similar data needs (e.g. demonstrate the portal to all community development agencies across jurisdictions). Furthermore, there are key local government departments and agencies that are envisioned to be active portal user and data contributors; these agencies should be engaged early on. Examples of local departments include, but are not limited to:

    - Palm Beach County School District
    - Palm Beach County Health Department
    - Palm Beach County Community Services Department
    - Palm Beach County Sheriff's office
    - Local State offices for: Department of Children

- ***General Public***: Inviting local government to be become portal stakeholders could provide an ideal and efficient mechanism to market the Portal Palm Beach County residents via public hearings and meetings (i.e. the Community Development Department regularly holds community meetings). Facilitated events/demonstrations in each of the County's seven commission district as well as in other local jurisdictions are recommended.

- ***Business Community***: Access to the business community may be most successful through Chamber of Commerce and/or the Economic Council of Palm Beach.

- ***Philanthropic/Foundations & Community Organizations/Non-Profits***: Initial efforts should take advantage of the built-in support of the portal planning effort to access the network of community groups and foundations. Examples of key philanthropic stakeholders include, but are not limited to:

    - Palm Beach County Children's Services Council
    - Community Foundation for Palm Beach and Martin Counties
    - Quantum Foundation
    - United Way of Palm Beach County
    - Healthcare District
    - Palm Healthcare Foundation

- ***Media outlet partnerships/Digital Public Square***: Media outlets (television, newspapers, and internet blogs) can provide an interesting symbiotic relationship with the portal. Media outlet can provide obvious marketing opportunities for the portal. However, perhaps not as obvious, an effective portal with accurate data presented with compelling visuals can be beneficial to journalists interested in public data that is too time-consuming to unearth and visualize in a design program. Likewise, a partnership with the Palm Beach County Digital Public Square could also serve a similar dual purpose of marketing the portal and serving as a resource for informed discussions on community issues.

3) Make the portal site *media-friendly.* Capturing attention from journalist, bloggers, and anyone else with an audience is important. Therefore, the website should make it easy for journalist to find information about the portal. Media-friendly ideas include, but are not limited to:

- Profiles of the board of directors (if applicable), founders, and other key personnel. Ensure that to include contact information (email and phone) for each contact listed on the profile.
- Have a downloadable media kit that includes everything a print media kit does.
- Offer downloadable images from the site so journalists and bloggers don't have to contact the portal administrator and wait for a response.
- Include press-ready quotes, both from members and directors as well as outsiders. Clearly indicate that journalists and other organizations may use the quotes and images in news coverage without contacting the organization for prior permission.

4) The outreach team (or dedicated staff person) can create a *quarterly newsletter* (both digital and traditional) to be mailed to targeted user groups, such as TIC and their affiliations. It is recommended that the newsletter commence in the 2nd year of the project and that the TIC use the newsletter to advertise the portal on their websites and mailing lists. Once the portal is launched, users can be invited to join an email list. At this point, the newsletter can become solely a digital e-newsletter. The email list can also be used to inform the users of new data updates, training webinars, events, and other information.

5) *Social media marketing* is the process of promoting the portal website through social media channels (e.g. Twitter, Facebook, Youtube) and it is a powerful strategy that can generate attention and traffic (in addition to any traffic the site is already receiving from search engines) at a low-cost. The following are a few ideas to keep in mind when using social media marketing:

- Determine which of the portal supporters are already on social networks through a survey. Sign up and create a profile on the media channels identified in the survey. Send an e-mail inviting your network to become your friend or to join your group.
- "Don't be 'static.' Be dynamic." Don't just set up a profile; create a group and use the social media to announce events. On Facebook, for instance, you can be a group and/or an event.
- Devote staff time to making your social networking effort a success. Assign the outreach specialist to accept friend requests, post comments on other people's pages, and invite others to become friends. The key is to communicate with the social network friends on a regular basis and to update the pages with new content. Use MySpace 'bulletins' and Facebook 'notes' on other users' profiles to get the word out on important issues and drive people to your page

6) *Find opportunities to make the portal relevant to larger community efforts* and embed the portal in those efforts. For example, HealthyCity supported city and county's Census 2010 Complete Count efforts in California by launching an on-line, interactive mapping platform on Census 2010 hard-to-count populations. Local jurisdictions and community groups used the portal for Census outreach planning up and down the state. In an unprecedented effort, nonprofits across California coordinated their outreach during the census by plotting their door-to-door outreach efforts on HealthyCity's map that highlighted weak neighborhoods that failed to respond to the census and, thus, informing outreach workers where to concentrate their efforts. If it works, HealthyCity's portal could save Californians millions of dollars in federal funding over the next decade and have established a cadre of new portal users by simply tweaking the portal, marketing its relevant use, and embedding it in a larger community effort.

6) Market the portal as the "go to" expert on for all data and research resources for Palm Beach County. This expertise can be accentuated by publishing online annual "State of the County" which measure specific indicators overtime and is published using the portal's visual aids. This annual publication can be a yearly marketing opportunity and combined with an events and press releases.

6.3 Training

The outreach and marketing sections above discussed creating a presence in the community. Training is different in that, once the portal has a captive audience, it helps potential users maximize their experience and achieve their research goals. In other words, building the capacity of the user to maximize the portal's data and resources creates a dedicated and vibrant user base that will sustain the longevity of the portal into the future.

Training tends to fall into two categories: learning aids and interactive technical assistance. Learning aids are help tools that can be embedded into the portal and be accessed on an as-needed basis by the user. Interactive learning aids or technical assistance requires an exchange between the user and the person providing the assistance; this assistance can be accomplished online or in person. The list below provides examples of the various types of training the portal administration can consider to provide to the public.

1) A ***user guide*** is a learning aid in the form of an online manual (with the option to download or print) that describes how to use the portal through the use of a static document (such as a PDF) by means of text and screen shots. User guides examples:

- Children's Trust (Kid Stats and Maps): http://www.thechildrenstrust.org/images/stories/inside_trust/research/ksm/Help_Guide-Data_Loader_061109.pdf
- HealthyCity: http://www.healthycity.org/doc/user_guide.pdf

2) A ***video tutorial*** is a learning aid that is also a user manual but in the form of a film that explains how to use the portal by means of examples illustrated on video and with audio. It is recommended that the technical team and the outreach team should work together to develop online video tutorials that demonstrates each portal functionalities. Video Tutorial Examples:

- MAPAS: http://open.cridata.org/maps/mapas/Tutorials.html
- Integrated Transportation Information System: http://itis.fiu.edu/help/

3) A ***webinar*** (short for web-based seminar) is an interactive workshop transmitted over the Internet. Each participant "attends" the workshop from his or her own computer and joins in on the discussion via the use of VoIP audio technology or a standard telephone conference call. Webinars can be routinely scheduled that provide instruction on how to utilize each main function of the portal and provide scenarios of real

world examples. The webinars provide users with an opportunity to see a live demonstration and ask questions. Specialized webinars can also be provided by user-type that demonstrates how to use the portal to best meet their specific needs (i.e. community based organizations, policy-makers, foundations, associations, and government agencies).

4) An interactive ***community workshop*** on how to utilize the portal can also be provided should a computer-lab facility be provided for the training. The computer-lab marks an important distinction between the demonstration of the portal mentioned in the previous section (under public engagement) and a training-workshop. This workshop can be designed similar to the webinar with the only difference being the delivery of the training in-person rather than over the Internet.

Examples of the type of training workshops and webinars include, but are not limited to:

- Introduction to the Portal: classes on how to navigate and use the portal (i.e. how to conduct research and contribute data, experiment with the various tools and datasets), and helpful hints.

- Specialized Workshops: How to use the portal to conduct your own research (can be divided by type of user)

5) ***Customized hands-on technical assistance*** *(TA)* is both an opportunity to provide highly specialized assistance to an organization and generate fees to support the portal. The portal's staff or retained TA provider can customize the TA, for a fee, for those organizations that require highly specialized help in applying portal's functions to informed decision-making and organizational strategies.

VII. Sustainability and Continued Growth

Several business models for sustaining and growing the portal were explored and researched, these include: 1) Continued grants from Federal, State and Local government agencies; 2) Contract work from business and local governments, including consulting services and training workshops, 3) Subscription or Membership Fee Structure, and 4) Advertisement. Below, these different business models are discussed. It is important to note that the four models are not mutually exclusive. For example, if the portal were to require grants to stay online –this does not preclude the possibility of leveraging these funds in other manners such as advertising or subscription services. However, for the sake of discussion, the different business models are evaluated individually.

7.1 Grants

Grants are defined as funding sources from government agencies, foundations, and any other non-profit organizations.

Both HealthyCity and the Hillsborough County Atlas are examples of successful portals that have sought grant funding from government agencies, particularly their local planning departments. Since it was launched, HealthyCity has gone through four iterations that extensively improved the site's functionalities and content enhancement. Each iteration received new grants from state and local agencies and various funding sources for major re-construction and enhancement. It is also interesting to note that HealthCity has actively marketed the portal to counties outside Los Angeles and, eventually, was able to access funding from the State of California to expand their portal into a statewide platform. Likewise, the Hillsborough County Atlas has also received multiple grants from various local government agencies that have funded the planning and implementation of the portal over the past 5-years.

Our planning process has also revealed opportunities for leveraging funding by other agencies outside the original consortium. For instance the Metropolitan Planning Organization (MPO) at Palm Beach has expressed an interest in funding the Bicycle Pedestrian Router Planner that can later be incorporated l on with Service 211 database. Other opportunities may exist to access grants from organizations that might be interested in developing specific aspects of the portal.

This project team should engage a large group of representatives and stakeholders from various agencies, in forms of advisory committees, such as TIC and TAC. The existing network of interested parties not only benefits the outreach, marketing, portal information dissemination, but also

provides a great advantage in future grant development. The Project Team should continue to work with the existing funders, e.g. Quantum Foundation, Community Foundations, etc. to seek grants at local, state and federal level. The funders and the project team should also explore ways of connecting with other counties or regions of Florida State in hope of expanding the community indicator portal to a state wide initiative – perhaps even setting a standard for portal development and implementation for the State of Florida. It is worthwhile to note that the concept of community portals have been discussed in other counties (e.g. Broward and Miami-Dade County). This interest from other counties creates an interesting opportunity for collaboration, not only for sharing the cost of funding and maintaining a portal, but also for ensuring that each county develops a portal that fit together like pieces of a puzzle to form a regional portal.

Innovative means of developing peripheral grants based upon the concept of a community information hub that benefits the funders, the planners, the government agency employees, the business community could include specialized information services tied to outreach and educational goals, as well as research topics in the area of developing predictive models of social needs, service needs based upon web information and data usages of the portal. Other related areas for future funding could be in the areas of citizen relationship management and citizen participation in planning and decision-making. Thus, by demonstrating the usefulness of the portal to these agencies, enough demand may be generated to access grants from potential government funders such as: the Palm Beach County planning departments, the Florida Department of Health, as well as federal funding agencies with local initiatives.

7.2 Contracts

The "Contracts" model refers to funding sources from two sources: 1) Technical Assistance (TA) and 2) Customized data analysis and services/products.

Healthy City is a project of Advancement Project, a self-described innovative civil rights law, policy, and communications "action tank." In an interview with Advancement Project's director, he described how HealthyCity is significantly funded by an entrepreneurial approach to sustaining the portal. The Advancement project has a team of TA providers that are subsidized by local and state government to provide assistance to Community Based Organizations (CBOs) on how to maximize the portal to advance their missions. In other words, the TA contracts subsidize the cost of sustaining the portal by as much as 70 percent. In turn, the CBOs become deeply connected with the portal and the data becomes vibrantly utilized to help the CBOs meet their mission. Examples of government agencies that have funded portal TA to CBOs in California have been the State, Mayor's offices, Health Departments, and Urban Planning Departments.

The second example of a contracts model is to make specialized services/products available to the business community users (e.g. the consulting firms, banks, business owners, etc.) or to funders and government agencies. The portal can advertise drill down services of any given community for detailed analysis and reporting of the community. The project team can provide most of the contracting services to the clients, and part of the fees charged will include the data usage of the Portal and can then be used for maintenance of the portal. The Social Compact, Inc. is an example of successful contract work of this nature. Social Compact provides drilldown profiles with data that is not easily available in the public domain. Their drilldown reports draws from real-time, transactional local market sources like local tax assessment information, building permits, and utility usage.

Successful, innovative ways of contracting could include providing a similar fee-based model for contracts to work in areas of market analysis, probability studies, corridor studies, and economic reports. The portal can also advertise a grid of customized data analysis, mapping, reporting services for particularly the business community of South Florida region. The portal will provide an archive of contracted projects where description and documentation can be made available. Examples of such contracted work can be potential market for healthy foods, or feasibility studies or location analysis of healthy food grocery stores.

7.3 Subscription

Although membership subscription has been utilized by multiple web portals, this model is not recommended in the during the first years after launching the portal as it largely depends upon creating a loyal following and first establishing a "sense of worth". As with most Internet enterprises (i.e. Facebook, Twitter, AVG), the key to successfully switching to a fee-based or an advertising model is to first provide the services for free, fine tune the product (which can only be accomplished after launching), and establish a successful marketing campaign that will hopefully lead to a loyal future client base that sees the usefulness in the product.

Therefore, if this is a model that the funders are willing to seriously consider, we recommend that all the data and functions from Phase I of the Portal be provided to the public for free. As the portal grows rich in content and gains more publicity, we could recommend free trials for some

of the more advanced datasets particularly proprietary data sets. A successful example of such a system is the Foundation Center (https://fcsecure.fdncenter.org/fdo_signup_prof/register.php?setplan=start). The Foundation Center has five different monthly or annual plans that a subscriber can choose from depending on the level of access to the data and functionalities they would like. Please see Figure 18 for a matrix of the available plans and the corresponding subscription rates the Foundation Center offers.

Plan Features Click a plan to learn more	Basic	Plus	Premium	Platinum	Professional
Detailed grantmaker profiles, including trustees, officers, donors, and recent IRS form 990s	Top 10,000 foundations	Top 10,000 foundations	Top 20,000 foundations	Nearly 100,000 grantmakers	Nearly 100,000 grantmakers
Detailed grant descriptions searchable by ZIP code, congressional district, and more		Over 1.6 million grants	Over 1.6 million grants	Over 2 million grants	Over 2 million grants
IRS form 990s for recipient organizations		✔	✔	✔	✔
Profiles of more than 12,000 grantmaking public charities and over 1,200 corporate giving programs				✔	✔
Power Search: See results from nine Foundation Center databases, including grantmakers, grants, 990s, and companies, as well as jobs, RFPs, news, foundation publications, and nonprofit literature					✔
Map of Cross-Border Giving: See grants from U.S. grantmakers to non-U.S. recipients on interactive maps—A $595 value					✔
Interactive maps showing foundation grants by state, county, city, ZIP code, and congressional district; international grants by country					✔
Interactive charts showing foundation grants by area of interest with three levels of detail					✔
Search Companies database that lets you search the profiles of sponsoring companies, another path to grants and in-kind donations					✔
Search 990s database that lets you keyword search across our entire universe of IRS 990s					✔
Unique **funder portfolios** featuring foundation news and publications, RFPs, job postings, and key staff affiliations for leading grantmakers					✔
Update Central: Build customized reports by state on new grantmakers, high-growth grantmakers, and grantmakers with recent changes					✔
E-mail alerts about recent changes and new developments for the grantmakers you choose					✔
50% off Philanthropy In/Sight for Professional annual subscribers. For more information, contact fdonline@foundationcenter.org.					✔
Subscription Rates	$19.95/mo $195/yr	$29.95/mo $295/yr	$59.95/mo $595/yr	$149.95/mo $995/yr	$179.95/mo $1,295/yr

(Figure 6 – Foundation Center Matrix of Plans and Subscription Rates)

Another considerations for this business model is to differentiate rates based on organizational memberships versus individual memberships. Also, fees can also be assessed depending on usage and/or access to the more advanced contents and datasets. In addition, we recommend a sliding fee scale based on organizational size be considered with possibly with a free trial period to engage interest from potential subscribers.

The disadvantage of a subscription system is that it creates administrative overhead of monitoring and collecting fees. If this business model is selected, we recommend that an analysis be conducted that measures the possible revenues generated against the administrative cost involved.

7.4 Advertising /Sponsorship

Similar to the problems of a subscription model, an advertising business model is not recommended in the first year after the portal is launched due to the need to first establish a frequent user following. In addition, the potential cost in marketing the portal and administration also exist in this scenario. Other issues that should be considered include discouraged or distracted users that may use the portal less frequently due to frequent pop-up advertisements. In short, we do not recommend traditional advertising as a means of generating revenue.

With that said, an alternative to traditional advertisement that we can recommend are sponsorship opportunities that are matched to search criteria. For instance, under the portal theme *Transportation*, a logo of Metropolitan Planning Organization or Palm Beach Transit can be embedded in the search results page(s). Another example could be that under the theme of *Food Security*, there could be logos of health food related businesses and organizations. We could classify the sponsorship based upon the sum of donation. The classes of sponsorship can vary in terms of frequency, duration of the appearance of their logos, and the prominence of the logo location on the portal.

7.5 Projected Business Cost and Revenue

To successfully implement the business models mentioned above, we anticipate additional staffing and time of the project team for proposal and contract development, marketing, account administration. Ideally, we can blend the two responsibilities in one experienced staff to be hired out of the revenue generated by the one or more of the 4 means mentioned above. The anticipated **annual** cost for implement each business model is as follow:

	Grants	Contracts	Subscription	Advertisement/ Sponsorship	Total
Cost	$28,000 (0.4 senior fte)	$35,000 (0.5 senior fte)	$22,500 (0.5 junior fte)	$22,500 (0.5 junior fte)	$ 108,000
Estimated Revenue which can be directed to the portal enhancement	$0 to $100,000	$0 to 100,000	0 to $15,000	0 to $50,000	$0 to $265,000

(Table 16 – Estimated Annual Cost by Business Model)

The cost for the business model is projected based upon the time and efforts required to ensure the success of the implementation of each of the business models. This role can be taken up by the Portal Content Administrator, in collaboration with the project team, focus groups and the funders.

The revenue for each business model is difficult to project. Funds from grants and contracts can be applied to leverage cost in improvement of data and information quality and quantity, the enhancement of the portal functions, and updates of the technology. Funds generated by Subscription, Advertisement and Sponsorship can be directly applied to cover the personnel cost, as they do not have restrictions on personnel related cost.