Leveraging Geospatial Web Platforms to Advance the Organization

PSSG-Transforming Information into Insight

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VA HEALTH CARE Defining EXCELLENCE in the 21st Century

The Planning Systems Support Group (PSSG) Identity & Mission

Who we are:

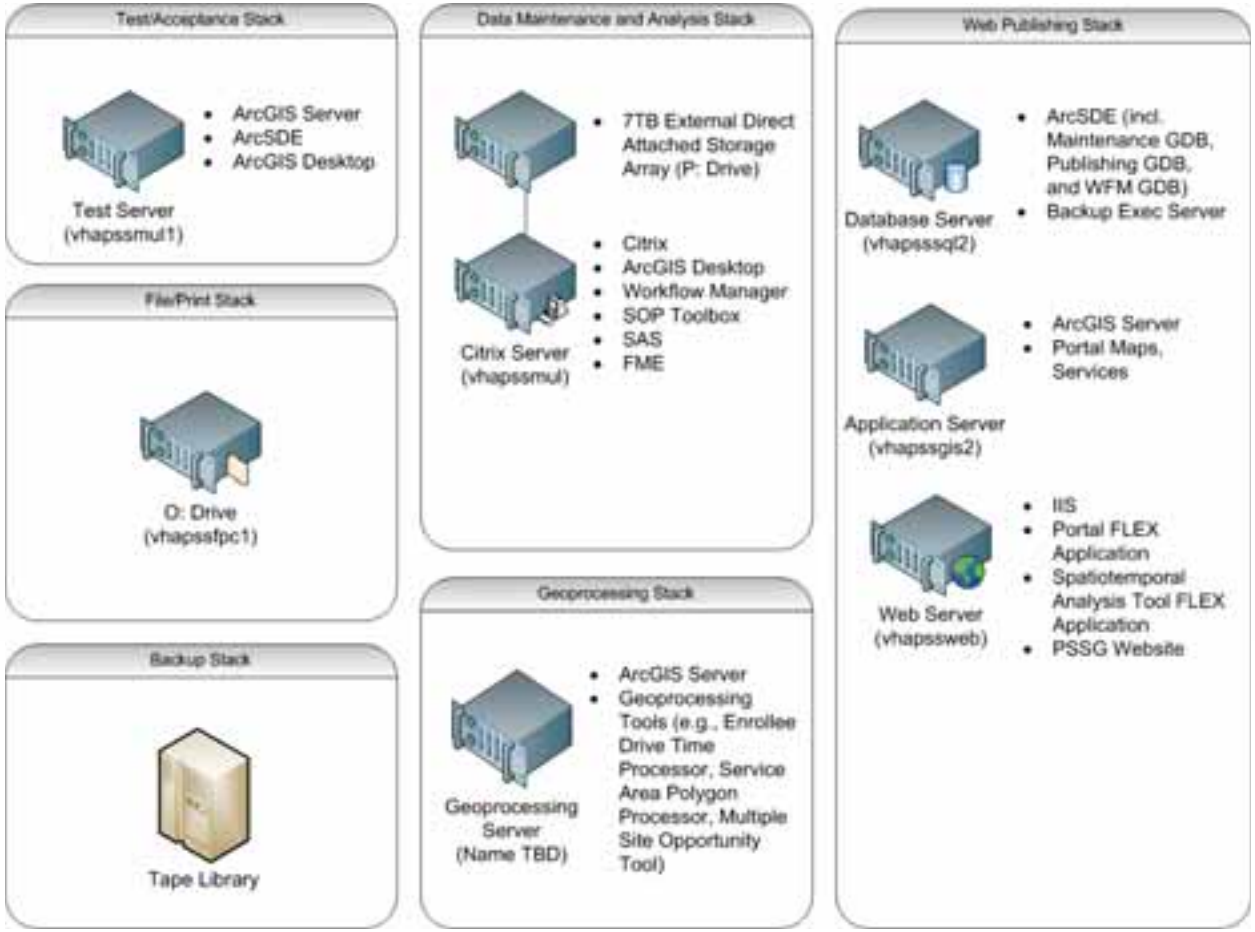
- Planning Systems Support Group (PSSG), the GIS office within the VHA Office of Policy & Planning
- Four geographers and support staff
- Contract support from Penobscot Bay Media and GIS, Inc.

Mission:

- To turn information into insight by leveraging geospatial analyses to optimize health care accessibility and delivery of services through population-based planning

Existing GIS Enterprises Infrastructure

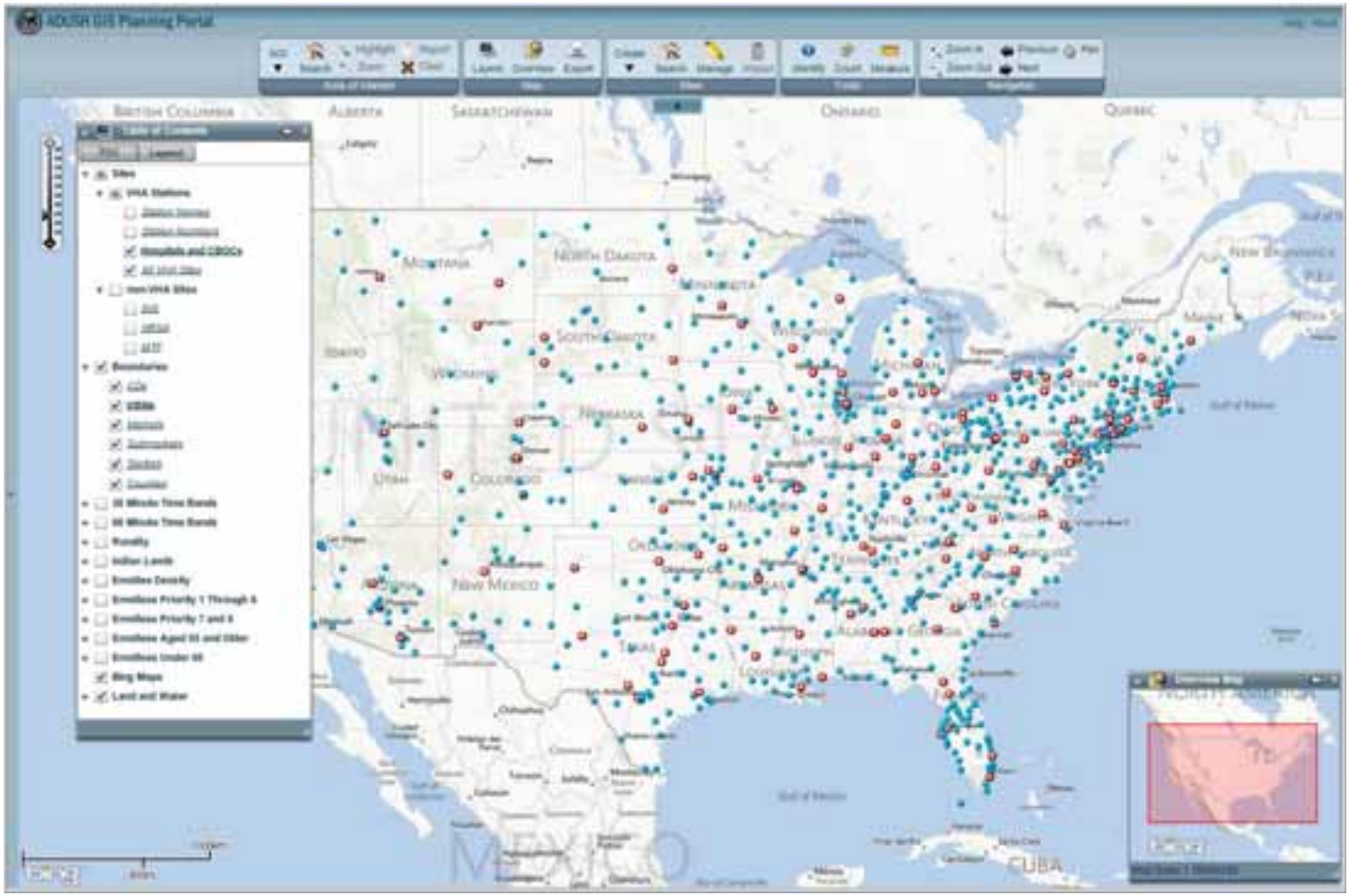
Internal Foundation



Expanding the GIS Footprint

ADUSH GIS Planning Portal

Hybrid mapping solution that provides simple and easy-to-use GIS capabilities to every VA user



Expanding the GIS Footprint
Web Platforms to Advance the Organization

Community Analyst

(Cloud-based mapping solution that provides simple and easy-to-use GIS capabilities to every user)

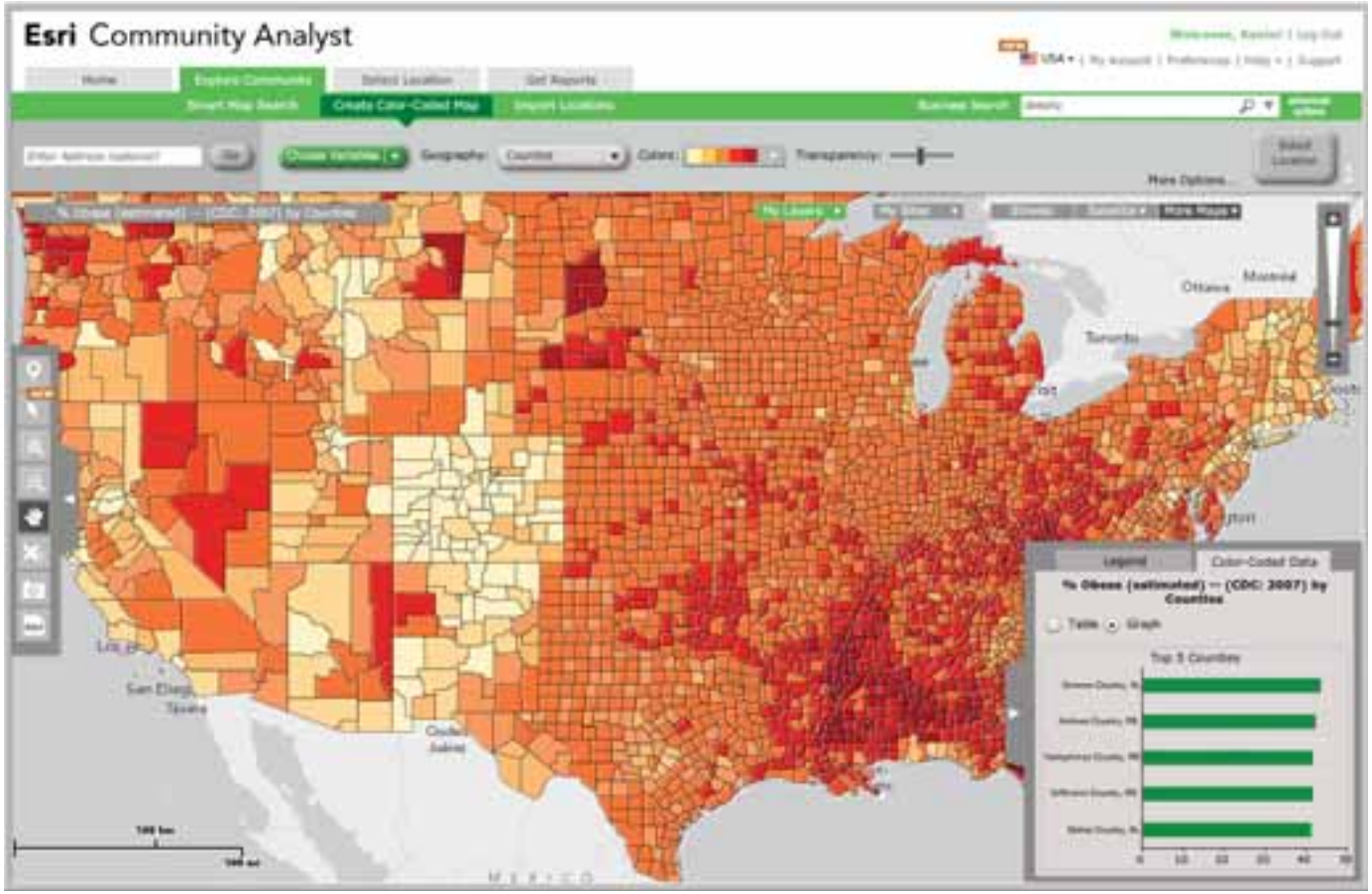
- Identify high risk populations using up to five customizable criteria
- Place health clinics for greatest community impact
- Learn more about the types of people that live in at-risk communities and how best to reach them
- Leverage to show gap analyses or correlations between the general population and the Veterans population

Source: http://www.esri.com/software/arcgis/community-analyst

Community Analyst

Spatial Demographics at Your Fingertips (% of Obesity by County)

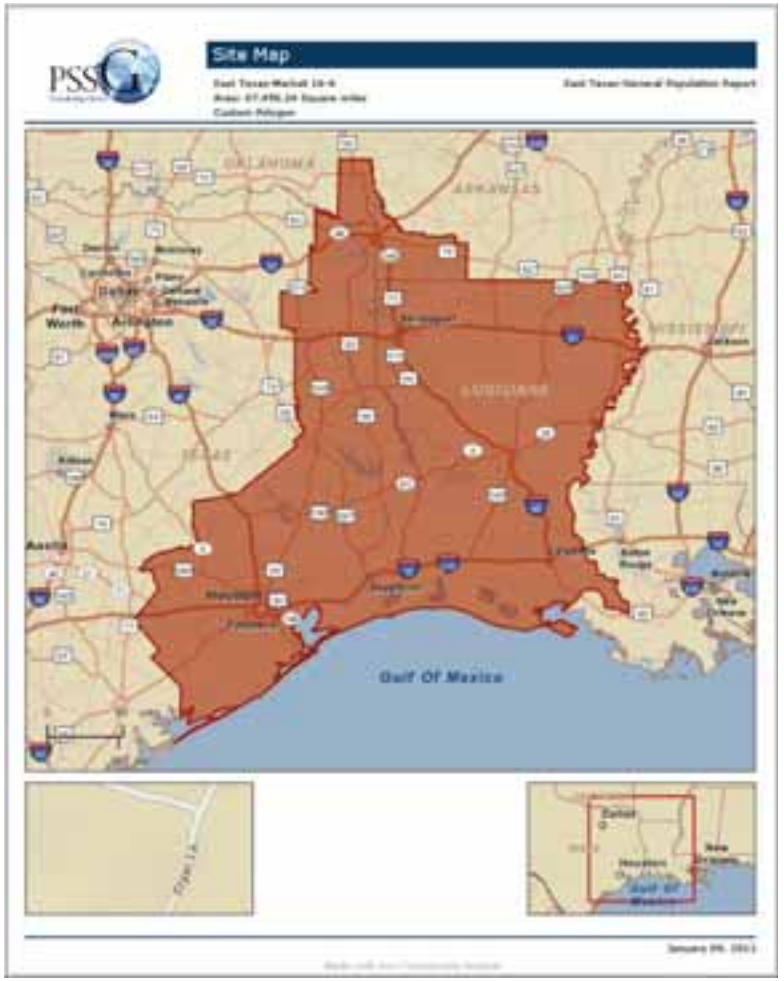
Community Analyst is a Web-based system that allows you to view and analyze demographic, public, and third-party sources of data to better understand the overall community in question and make better policy decisions. With Community Analyst, you can understand and compare communities more deeply and on a factual level.[2]

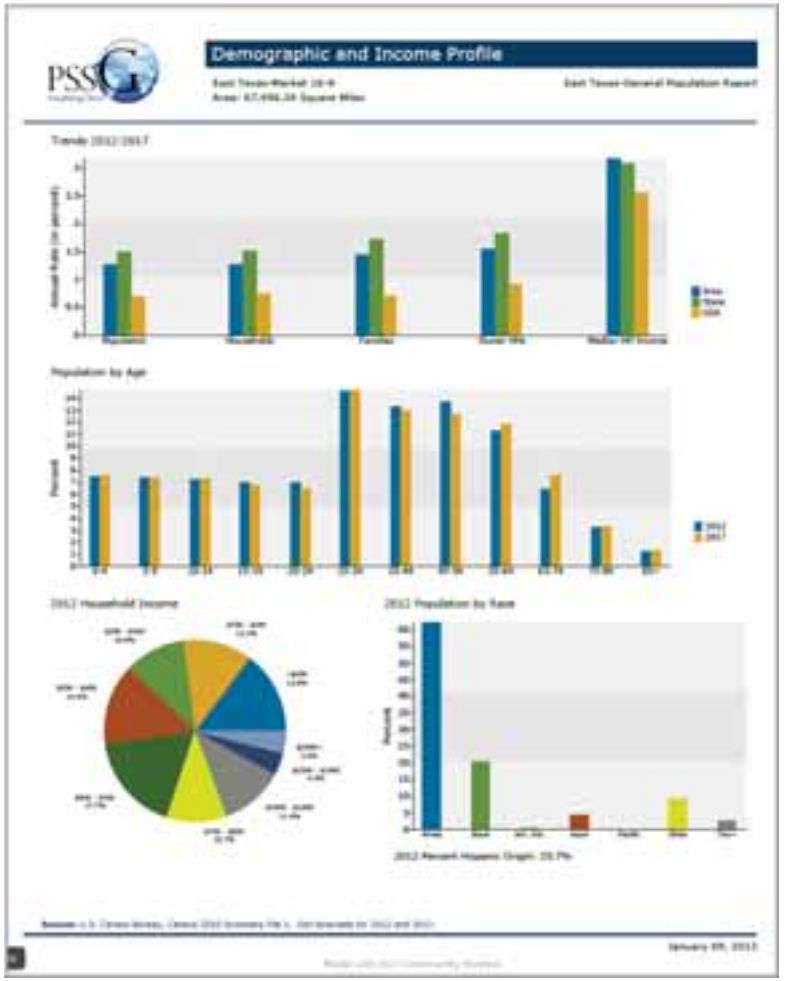


2. Source: http://help.arcgis.com/en/communityanalyst/online/data/data_descriptions.html

PSSG Leverages Community Analyst Reporting

Robust Geospatial Analyses and Reporting





PSSG Leverages Community Analyst Reporting

General Population Statistics within VA Geographical Boundaries

Demographic and Income Profile

Summary	Census 2010	2012	2017
Population	8,322,646	8,796,221	10,428,634
Households	3,429,410	3,616,656	3,747,362
Families	2,385,208	2,427,994	2,496,108
Average Household Size	2.71	2.70	2.70
Owner Occupied Housing Units	2,225,502	2,341,271	2,421,530
Renter Occupied Housing Units	1,203,488	1,276,387	1,325,132
Median Age	34.2	34.0	34.0

Trends: 2012 - 2017 Annual Rate	Area	State	National
Population	1.94%	1.48%	0.68%
Households	1.28%	1.01%	0.74%
Families	1.42%	1.72%	0.72%
Owner HHs	1.54%	1.02%	0.91%
Median Household Income	2.10%	2.07%	2.05%

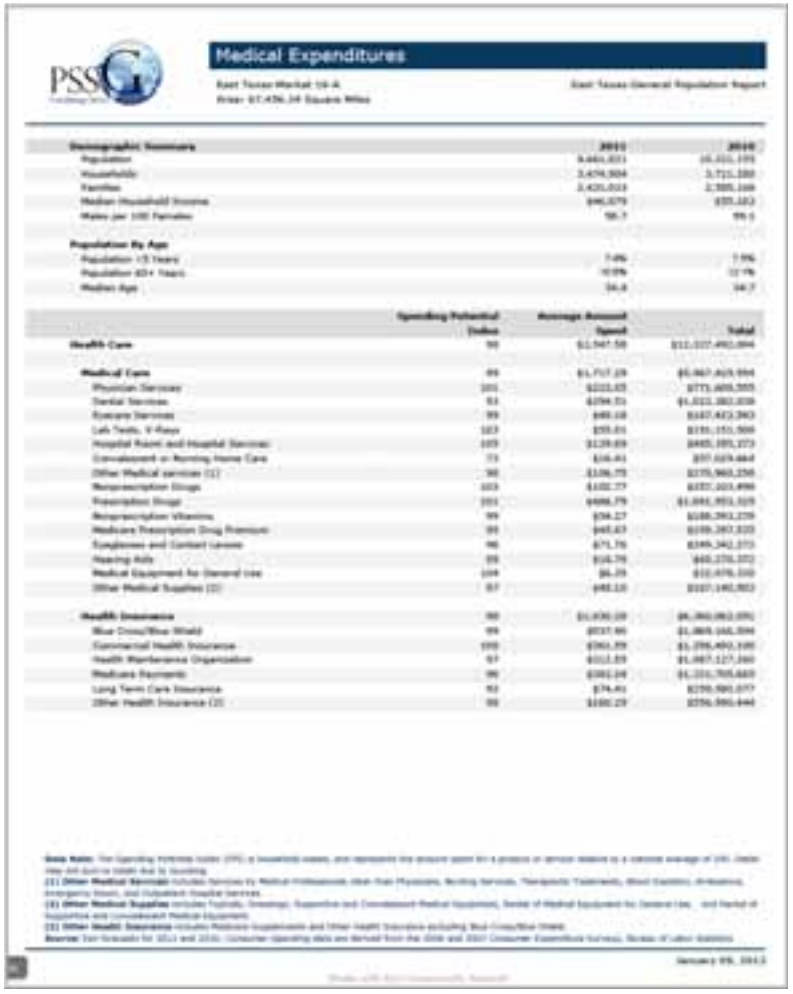
	2012		2017	
Households by Income	Number	Percent	Number	Percent
<$15,000	550,048	14.0%	511,451	13.6%
$15,000 - $24,999	430,554	11.2%	344,014	9.2%
$25,000 - $34,999	382,662	10.0%	326,849	8.7%
$35,000 - $49,999	566,434	14.4%	471,918	12.6%
$50,000 - $74,999	622,221	17.7%	555,724	15.6%
$75,000 - $99,999	375,138	10.7%	486,347	13.0%
$100,000 - $149,999	401,947	11.4%	467,501	12.5%
$150,000 - $199,999	140,296	4.0%	174,359	4.7%
$200,000+	137,975	3.9%	156,319	4.2%
Median Household Income	$46,359		$54,313	
Average Household Income	$65,841		$75,696	
Per Capita Income	$24,521		$27,991	

	Census 2010		2012		2017	
Population by Age	Number	Percent	Number	Percent	Number	Percent
0 - 4	719,814	7.6%	727,751	7.5%	788,301	7.6%
5 - 9	708,198	7.4%	723,698	7.4%	776,228	7.4%
10 - 14	697,294	7.3%	703,198	7.2%	759,367	7.3%
15 - 19	698,202	7.3%	695,302	7.0%	697,114	6.7%
20 - 24	669,221	6.9%	688,210	7.0%	678,559	6.5%
25 - 34	1,369,929	14.4%	1,431,227	14.6%	1,536,992	14.7%
35 - 44	1,197,249	13.6%	1,288,849	13.2%	1,357,728	13.0%
45 - 54	1,344,505	14.1%	1,341,580	13.7%	1,322,591	12.7%
55 - 64	1,036,441	10.9%	1,111,481	11.3%	1,232,536	11.8%
65 - 74	572,559	6.0%	627,264	6.4%	765,801	7.3%
75 - 84	319,273	3.3%	321,719	3.3%	395,998	3.8%
85+	113,866	1.2%	111,319	1.1%	133,627	1.3%

	Census 2010		2012		2017	
Race and Ethnicity	Number	Percent	Number	Percent	Number	Percent
White Alone	5,561,932	62.4%	6,106,417	62.2%	6,384,615	61.2%
Black Alone	1,971,699	20.7%	1,963,298	20.5%	1,987,468	19.0%
American Indian Alone	39,930	0.9%	62,861	0.6%	72,408	0.7%
Asian Alone	424,898	4.5%	491,640	4.8%	524,946	5.0%
Pacific Islander Alone	5,347	0.1%	6,066	0.1%	6,411	0.1%
Some Other Race Alone	845,224	0.9%	902,941	9.2%	1,040,323	10.0%
Two or More Races	240,316	2.3%	261,004	1.7%	315,363	3.0%
Hispanic Origin (Any Race)	1,362,119	14.8%	1,519,666	15.7%	1,990,614	19.1%

Data Note: Income is expressed in current dollars.
Source: U.S. Census Bureau, Census 2010 Summary File 1. Esri forecasts for 2012 and 2017.

January 09, 2013



Medical Expenditures

Demographic Summary	2012	2017
Population	9,661,031	10,311,195
Households	3,674,504	3,711,380
Families	2,431,013	2,500,168
Median Household Income	$46,079	$55,183
Males per 100 Females	96.7	99.1

Population By Age		
Population <5 Years	7.4%	7.5%
Population 65+ Years	10.9%	12.7%
Median Age	34.8	34.7

	Spending Potential Index	Average Amount Spent	Total
Health Care	99	$1,947.58	$11,337,492,894
Medical Care	99	$1,717.29	$9,967,929,994
Physician Services	101	$213.03	$771,609,555
Dental Services	91	$294.31	$1,021,382,039
Eyecare Services	99	$49.18	$167,423,943
Lab Tests, X-Rays	103	$55.01	$191,151,509
Hospital Room and Hospital Services	103	$129.69	$445,195,273
Convalescent or Nursing Home Care	73	$16.41	$57,029,464
Other Medical services (1)	98	$106.75	$375,960,256
Nonprescription Drugs	103	$102.77	$357,303,496
Prescription Drugs	101	$486.79	$1,691,951,519
Nonprescription Vitamins	99	$54.27	$188,393,229
Medicare Prescription Drug Premium	99	$45.63	$159,287,320
Eyeglasses and Contact Lenses	98	$71.76	$249,342,271
Hearing Aids	99	$19.79	$69,270,372
Medical Equipment for General Use	104	$6.39	$22,476,310
Other Medical Supplies (2)	97	$48.10	$167,140,953
Health Insurance	99	$1,030.19	$6,360,062,091
Blue Cross/Blue Shield	99	$537.90	$1,869,166,994
Commercial Health Insurance	100	$761.39	$1,296,492,140
Health Maintenance Organization	97	$312.59	$1,087,127,160
Medicare Payments	99	$382.04	$1,331,705,683
Long Term Care Insurance	92	$74.41	$258,580,077
Other Health Insurance (3)	99	$180.29	$256,990,644

Data Note: Net Spending Potential Index (SPI) is household based, and represents the amount spent for a product or service relative to a national average of 100. Detail may not sum to total due to rounding.
(1) Other Medical Services includes Services by Medical Professionals, Other Non-Physicians, Nursing Services, Therapeutic Treatments, Blood Facilities, Ambulance, Emergency Room, and Outpatient Hospital Services.
(2) Other Medical Supplies includes Topicals, Dressings, Supportive and Convalescent Medical Equipment, Rental of Medical Equipment for General Use, and Rental of Supportive and Convalescent Medical Equipment.
(3) Other Health Insurance includes Medicare Supplements and Other Health Insurance excluding Blue Cross/Blue Shield.
Source: Esri forecasts for 2012 and 2017. Consumer spending data are derived from the 2008 and 2007 Consumer Expenditure Surveys, Bureau of Labor Statistics.

January 09, 2013

Expanding the GIS Footprint
Web Platforms to Advance the Organization

ArcGIS Viewer for Flex Web Apps

Hybrid mapping solution that provides simple and easy-to-use GIS capabilities to every user

- Ready to deploy GIS Web client mapping application specifically built to serve health care policy and program needs

- Easily configurable to meet customer business needs and requirements PSSG can customize viewer to focus on delivery to meet business needs no vendor support or expensive contracts

- Mapping platform allows end users to create and print customizable maps in a variety of sizes and empowering end users to create maps with little or no mapping experience

Health Care Planning Model (HCPM) Maps

Last Year - Library of Static PDF Maps

INTRANET

UNITED STATES DEPARTMENT OF VETERANS AFFAIRS

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- About the PSSG
- What is GIS?
- GIS Planning Portal
- Rural Access Tool
- Space-Time Tool
- GeoPortal Server (Coming Soon!)
- GIS & Maps
- More than Maps
- VAST (Geocoded)
- VAST
- Zip Code Finder
- Archives
- PSSG SharePoint (Data & Reports)
- PSSG Analysis Request Form
- Feedback
- PSSG Sitemap
- PSSG Staff & Contacts
- VA GIS Users Group

PLANNING SYSTEMS SUPPORT GROUP (PSSG)

HCPM Market Maps

1 2 3 4 5 6 7 8 9 10 11 12 15 16 17 18 19 20 21 22 23

VET POP LEGEND - ENROLLEE LEGEND - National Map

VISN	VISN Enrollee Maps (2010)	VISN Enrollee Maps (2020)	VISN VetPop Maps (2010)	VISN VetPop Maps (2020)
1	East/01-a	East/01-a	East/01-a	East/01-a
	Far North/01-b	Far North/01-b	Far North/01-b	Far North/01-b
	North/01-c	North/01-c	North/01-c	North/01-c
	West/01-d	West/01-d	West/01-d	West/01-d
2	Central/02-b	Central/02-b	Central/02-b	Central/02-b
	Eastern/02-a	Eastern/02-a	Eastern/02-a	Eastern/02-a
	Finger Lakes/02-e	Finger Lakes/02-e	Finger Lakes/02-e	Finger Lakes/02-e
	South Tier/02-f	South Tier/02-f	South Tier/02-f	South Tier/02-f
	Western/02-d	Western/02-d	Western/02-d	Western/02-d
3	VA Long Island /03-a	VA Long Island /03-a	VA Long Island /03-a	VA Long Island /03-a
	VA Metro New York /03-b	VA Metro New York /03-b	VA Metro New York /03-b	VA Metro New York /03-b
	VA New Jersey /03-c	VA New Jersey /03-c	VA New Jersey /03-c	VA New Jersey /03-c

Health Care Planning Model (HCPM) Maps

Example - One of the Static PDF Maps

Health Care Planning Model (HCPM) Flex Viewer

NOW - Empowering users to customize their own market maps

Health Care Planning Model (HCPM) Flex Viewer

NOW - Empowering users to customize their own market maps

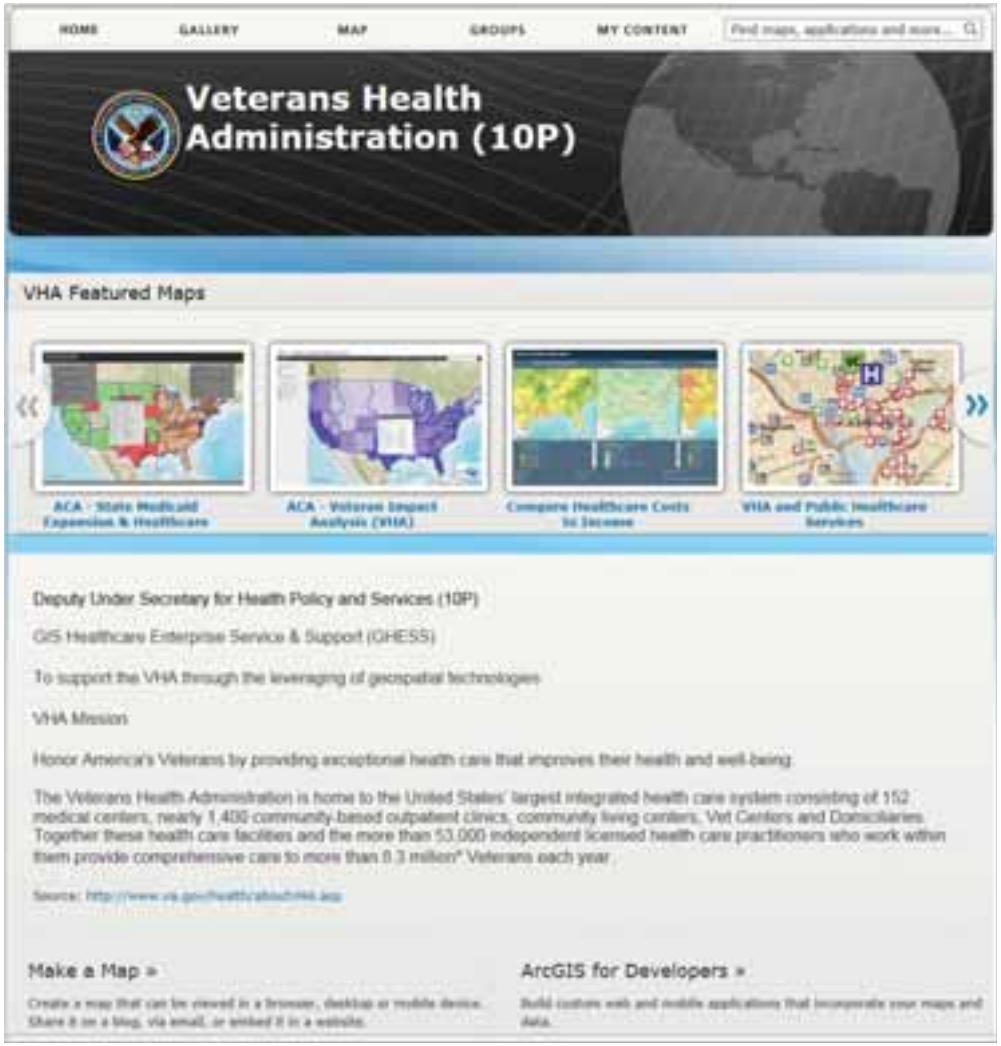
Health Care Reform Impact

Flex Viewer - Mapping at Your Fingertips

Leveraging the Power of GIS to Assist with Health Care Reform Impact Analysis

ArcGIS Online for Organizations

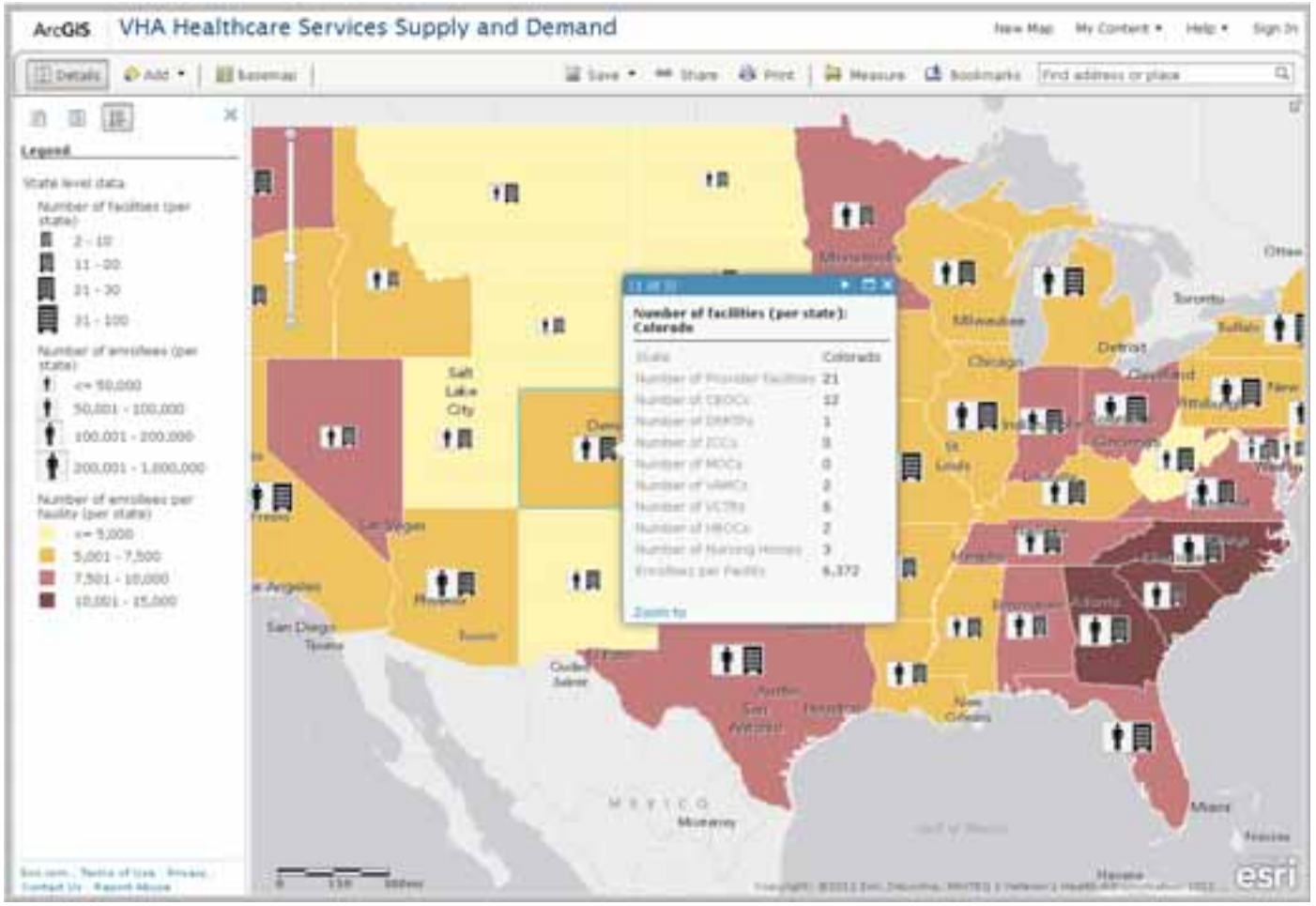
Innovatively Collaborative by Empowering VHA Employees



ArcGIS Online Web Maps

VHA Health Care Services and Demand

This is a basic example of how the power of GIS can be leveraged to visually show proportionally our health care facilities and enrollee demands by state.



ArcGIS Online Web Apps

VHA Health Care Service & Live Weather Events

This is a basic example of how the power of GIS can be leveraged to visually show the proximity of VA facilities in relation to minor an major weather related events in near real time using NOAA data feeds.

GIS Case Studies: An ROI Approach

The PSSG - Delivering Data Driven Results

Case Study:
Geospatial Technologies Assist with Optimizing Mobile Vet Center Assignments

PLANNING SYSTEMS SUPPORT GROUP

Introduction Statement:

GIS technologies and methodologies provide decision-makers with the ability to "visualize choice" on a local, regional or national level. Recently the Readjustment Counseling services (RCS) had to consider how to best allocate limits resources on a national scale. Their outreach to the Planning Systems Support Group (PSSG) diversified into a collaborative effort between these two offices to enhance access to care for our enrolled Veterans we so proudly serve.

Background:

Since the middle of 2011, the PSSG has applied the advanced location-allocation analysis tool provided by ArcGIS software to assist planners with recommendations on where to best place new facilities. Additionally, the PSSG has used maximum coverage and attendance methodologies to derive unique hybrid outputs to assist decision-makers in identifying the spatial gaps that should be considered as new candidate sites. PSSG's analysts has assisted numerous planners and high level stakeholders in applying selected criteria and data to estimate the future impact of site openings and closings. This work demonstrates the potential of using GIS technologies to be the "tool of choice, to help visualize choice" within the VHA.

The Issue:

The Veterans Health Administration (VHA) Veterans Center Program currently has 50 mobile Veterans Centers. VHA is acquiring 30 more mobile/RV units. The Office of the Deputy Secretary tasked RCS with recommending options to best allocate these new 30 mobile sites, with a focus on rural and highly rural community outreach with a proximity to military bases.

Criteria:

- Proximity to military bases with a population of 10K or more
- Focus on Rural areas
- Use 2010 Veteran Population data aggregated at the county level as demand points
- Only include county centroids with a Veteran population of 5,000 to 25,000
- Range of vehicles is 100 minutes

The Solution:

The PSSG provided preliminary location-allocation analysis to the RCS to assist them with the placement of these 30 new Mobile Vet Center vehicles nationwide. This analysis complemented other information available to the RCS to optimally place these new mobile vehicles nationwide.

Case Study:
VA & HRSA Mental Health Collaboration - Leveraging Geospatial Awareness

PLANNING SYSTEMS SUPPORT GROUP

Introduction:

Geospatial Information Systems (GIS) technologies and spatial methodologies provide decision-makers with the ability to "visualize choice" at the local, regional and national levels. Recently, the Planning Systems Support Group (PSSG) provided data, maps and analyses to inform a collaborative effort between the Health Resources and Services Administration (HRSA) and Veterans Affairs Office of Mental Health Services (OMHS). This initial support required an assessment on options to best aggregate, standardize and represent numerous mental health facility related data with a very short suspense. As a result of this effort, the Office of Policy Analysis and Forecasting (PAF), and the OMHS initiated a broader view of applying GIS analytics to better inform mental health care policies and programs.

Background:

Since the summer of 2011, the PSSG has applied spatial analyses and tools to assist with various population health initiatives. For example, the PSSG recently assessed options to reduce health inequities relative to health care access and resource distribution. The PSSG specializes in providing data analysis to assist decision-makers in indentifying spatial gaps in health care access and better aligning health care services with our Veteran enrollee population needs. This includes projecting the future impact of facility openings and closings utilizing current and projected Veteran population data. PSSG's work clearly demonstrates the value of using GIS technologies to be the VHA "tool of choice, to help visualize choice" for population health care access and resource distribution options.

The Issue:

Program directors requested timely and accurate spatial views of HRSA Health Centers and VA facilities data. The analysis included sourcing and displaying Federally Qualified Health Centers (FQHC) and HRSA Community Health Centers with the number of Veterans served at these Health Centers, Facility Service Areas (FSAs), observed to mean ratios within provider FSAs, and Behavioral Health & Substance Abuse points of care to provide a visual understanding of which Health Centers offer Behavioral and Substance Abuse services.

Communicating these data to others in tabular format only provides a limited amount of insight. When presenting this data visually on a map, PSSG was able to turn this information into insight and provide stakeholders with the ability to quickly identify areas of concern and opportunities to focus resources. If a picture is worth a thousand words, then visualizing a thousand points geographically represents countless opportunities for inter-agency collaboration to better serve our Veterans.

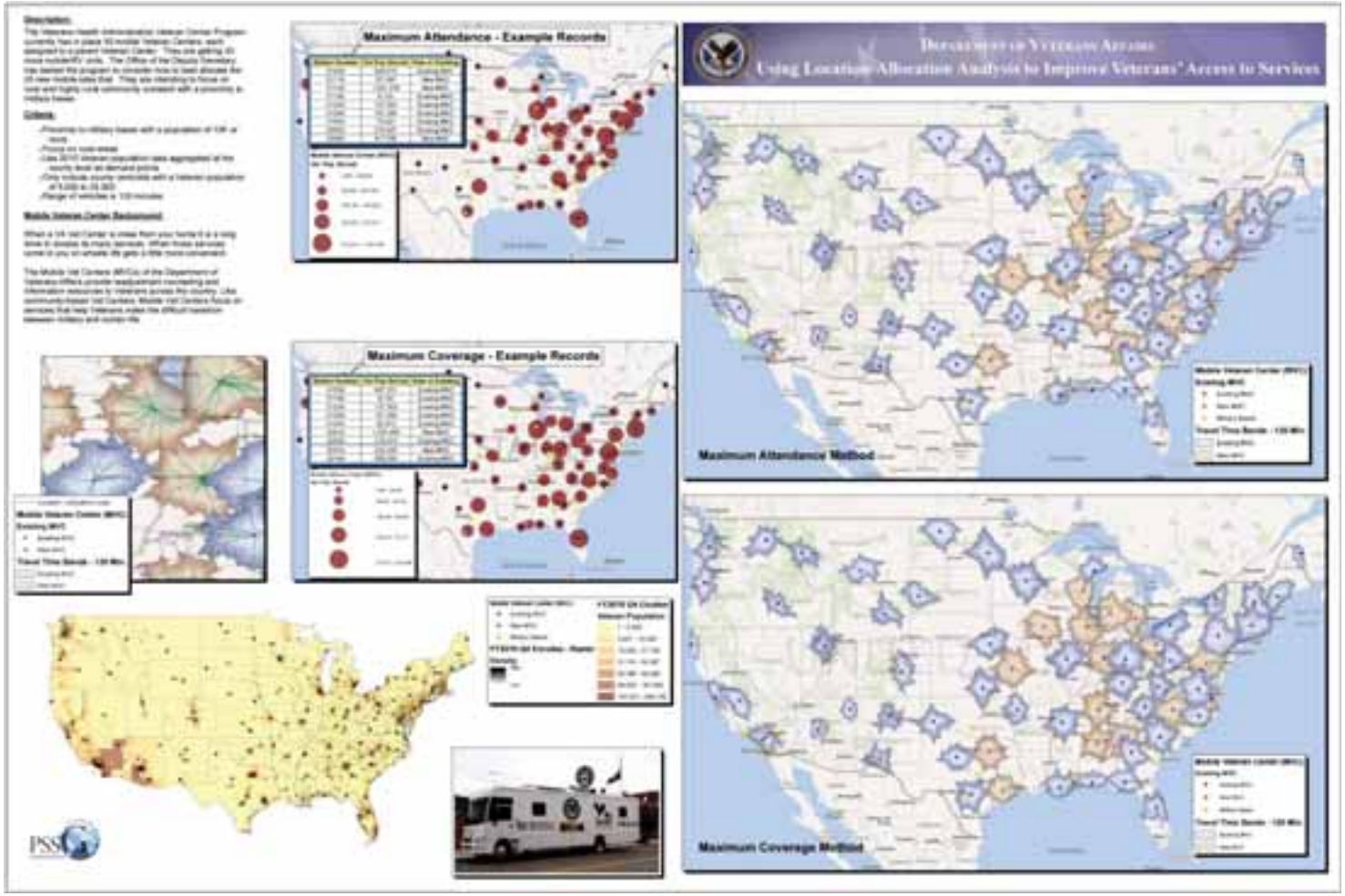
The Solution:

The PSSG has elevated static maps to the next level. Utilizing available technology of a professional and advanced web mapping platform called ArcGIS Flex viewer, the PSSG developed and deployed a robust interactive web mapping experience to provide end users the ability to view and search population health related data, such as provided in this Flex viewer map titled "Behavioral Health Points of Care." This is one example of what can result when VHA and HRSA combine innovation with collaboration from a spatial perspective.

GIS Industry Leading Products

Where geospatial analyses and cartographic excellence converge

This map has been selected for the upcoming “Mapping the Nation” full color yearly publication



Questions/Comments?