/// Case Study

How AI-Powered Sentiment Analytics Shaped Palm Beach County's Transportation Future

WSP partnered with Syntasa to analyze search activity, social media, and community surveys using AI-powered sentiment analytics to supercharge the public's input into their transportation plan.

AI Sentiment Analytics | 85%+ Classification Accuracy | 70–80% Less Manual Effort | Real-Time Looker Studio Dashboards

BACKGROUND

WSP is a global leader in transportation consulting. They set out to develop Palm Beach County's transit and traffic plans for the next 25+ years, but they faced a critical question: How do you assimilate thousands of diverse voices into coherent community input for 1.5 million people?

THE CHALLENGE: ACCESSING INSIGHT FROM COMMUNITY VOICES

The county had access to extensive data, including Google Search, social media posts, survey responses from 1,400 residents (across ages, income levels, regions, and transportation needs), and traffic count data from hundreds of roadway segments.

> *"We had this wealth of information, but manually categorizing free-form text across multiple data sources was incredibly time-consuming. We needed to quickly synthesize the most popular topics, identify sentiment patterns, and spot regional priorities while maintaining accuracy."*
>
> **— WSP Project Team**

1. DATA SOURCE CHALLENGES

Google Search Data Granularity. While Google Search data is most easily available at the Direct Marketing Area (DMA), Palm Beach County needed more granular insight into the 38 cities within its boundaries.

Traffic Data Integration. Raw traffic data was at the intersection level and needed to be aggregated into maps of traffic activity to enable comparison with other geographic data sources.

2. SURVEY DATA PROCESSING

Open-Ended Response Analysis. Free-form survey responses required LLM analysis to categorize and extract sentiment, as manual review would have been prohibitively time-consuming.

Limited Reporting Capabilities from Raw Data. Initial survey reports could not cross-reference responses across multiple questions, limiting the ability to segment insights by demographics.

3. GEOGRAPHIC & PLANNING CHALLENGES

East–West Development Complexity. The sparsely populated western area required dedicated analysis sections to support long-term development goals of connecting it with the more populated North and South regions.

AT A GLANCE

Client: WSP · Palm Beach County
Population: 1.5 million
Horizon: 25+ year plan
Sources: Survey, Search, Traffic, Census

SURVEY REACH

1,400+ residents across 30 questions and 16 open-ended fields, covering age, income, region, race, gender, and length of residency.

ZIP CODES FLAGGED

33458 · 33411 · 33415
33463 · 33433

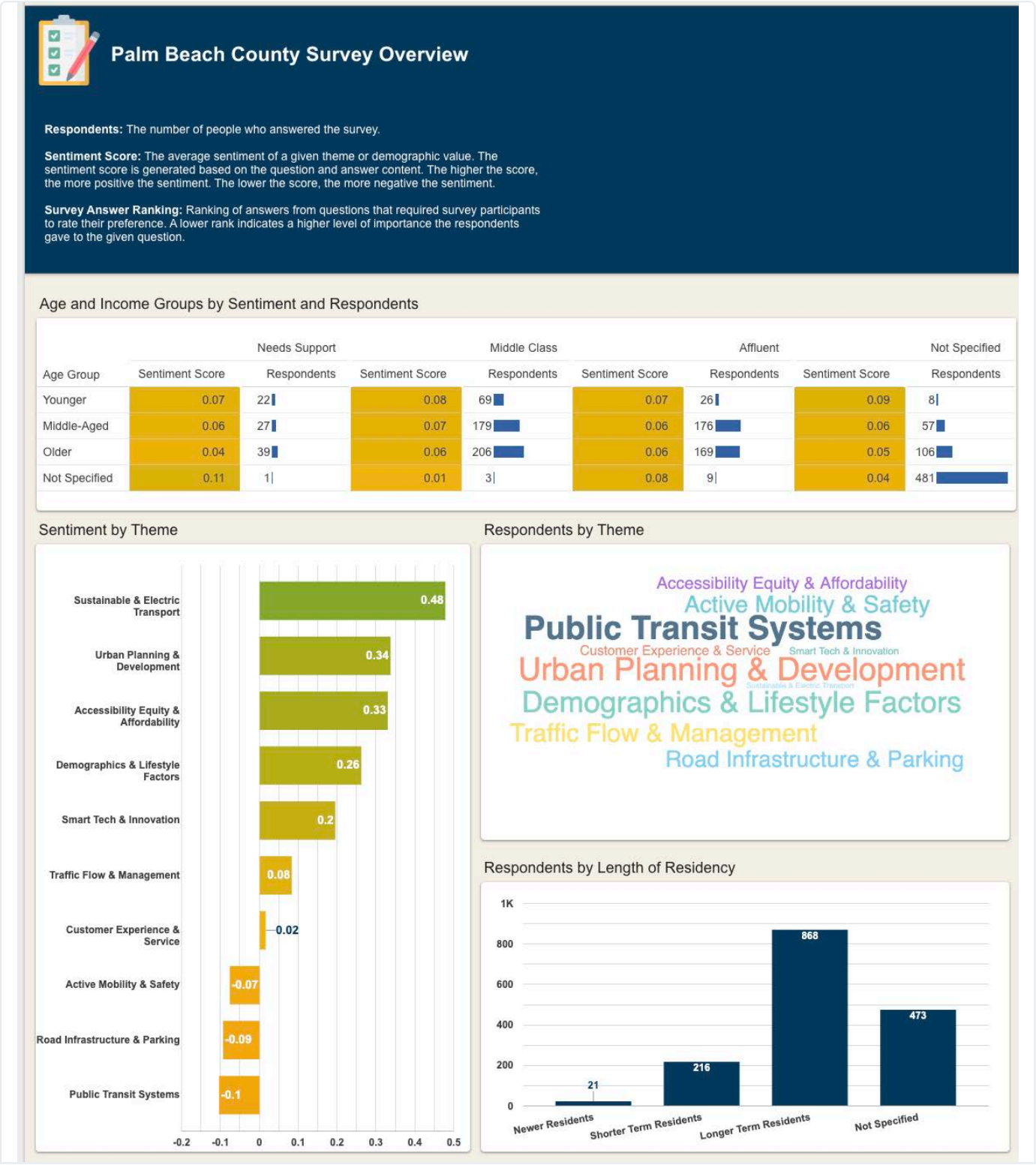
Priority across surveys, search, and traffic.

THE SOLUTION: LATENT DATA → STRATEGIC ACTION

WSP partnered with Syntasa to deploy a Sentiment Analysis Solution that integrated four major data sources: survey responses (30 questions including 16 open-ended fields), Google Search Trends, traffic count data from Palm Beach County Engineering, and U.S. Census demographics — into a unified analytics environment.

At the heart of the solution was a custom-written prompt for Gemini specifically crafted to understand the sentiment of transportation language used by residents, distinguishing between *"more bus routes"* (service expansion) versus *"cheaper bus fares"* (affordability concern).

The platform leveraged Gemini and Vertex AI for topic modeling, automatically categorizing 1,400+ free-form responses into 10 transportation themes with 85%+ sentiment classification accuracy, while reducing manual effort by 70–80% through automated data pipelines and providing real-time visibility via Looker Studio dashboards with customizable filtering.

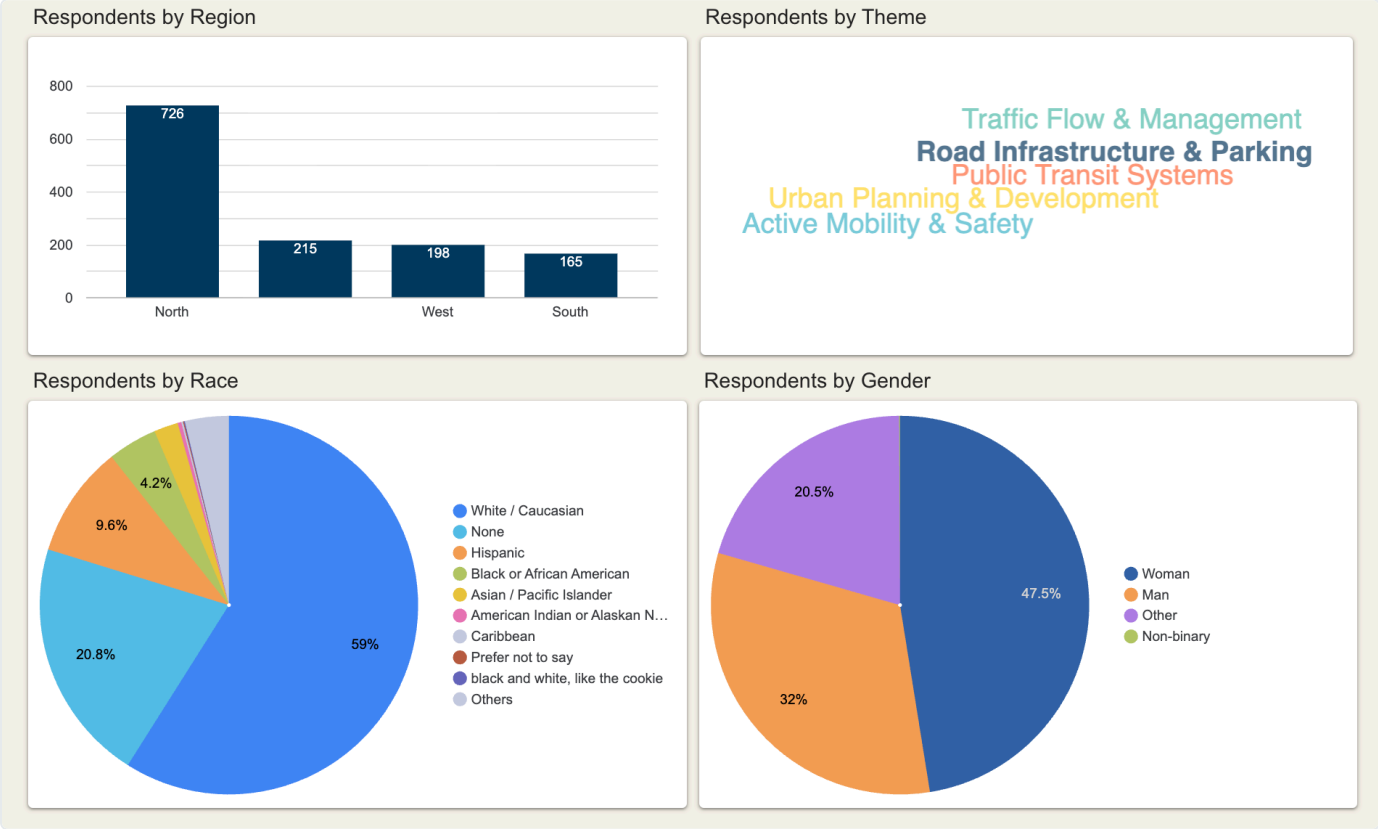


UNCOVERING REGIONAL DIFFERENCES

The AI-powered analysis revealed dramatic regional differences:

NORTH	SOUTH	WEST
Wanted a major-metro transit network with increased bus routes and East–West light rail.	Prioritized a reliable, cheaper train system with free parking and resistance to app-based payments.	Highest negative sentiment with pronounced concerns around access, affordability, and limited transit options for long-distance commutes to Miami.

The platform identified specific high-pressure areas for immediate intervention, with ZIP codes **33458, 33411, 33415, 33463, and 33433** consistently emerging as priority areas across survey responses, search activity, and traffic data.



Respondents broken down by region, theme cluster, race, and gender.

	Answer	Rank
1.	Traffic Congestion	
2.	Limited sidewalks and trails	
3.	Insufficient access to public transportation	
4.	Poor roadway conditions (potholes, flooding, bumps)	
5.	Unsafe roadway design (blind corners, poor lighting, abrupt merges)	
6.	Lack of bike lanes	
7.	Limited connectivity between neighborhoods, cities, and counties	

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Survey answer ranking: lower rank = higher reported importance.

KEY OUTCOMES

85%+	70–80%	1,400+	7
Sentiment classification accuracy	Reduction in manual effort	Free-form responses analyzed	Strategic recommendations

→ **4 integrated data sources** — including free-form surveys, traffic counts, Google trends, social insights, and census demographics.

→ **Multi-dimensional insights** across income, age, gender, region, and transportation needs.

→ **Actionable intelligence for better governance** — ensuring underserved voices shape transportation decisions.

→ **Real-time dashboards** with customizable filtering for immediate strategic visibility.

SEVEN STRATEGIC RECOMMENDATIONS

For Palm Beach County, these insights translated into seven data-driven strategic recommendations: strengthening transit reliability in high-need areas; addressing regional and socioeconomic inequities through first- and last-mile connections; enhancing safety infrastructure for women and vulnerable populations; advancing smart mobility technologies; and optimizing traffic signals countywide.

What used to take weeks of manual work now happened in hours, fundamentally transforming how WSP and the county approached transportation planning. It shifted the conversation from *"what do we think communities need?"* to *"what are communities telling us they need?"* with confidence that came from truly understanding constituent voices.

> *"Syntasa's platform gave us the confidence to present findings to county stakeholders knowing the data was accurate and comprehensive. What used to take weeks now happens in hours, with insights we can actually act on. The ability to see sentiment patterns across demographics and regions transformed how we approach equity in transportation planning."*
>
> **— WSP Project Team**, *Palm Beach County CTMP*

TECHNOLOGY SPOTLIGHT: THE TOOLS THAT MADE IT POSSIBLE

The CTMP Sentiment Analytics solution was built on Syntasa's Data + AI Platform — a no-code, low-code, and pro-code platform that orchestrates native cloud services to unearth insights from digital behavior, securely and at scale.

Google Cloud Platform Integration: BigQuery for data warehousing, Vertex AI for machine learning, seamless integration with existing cloud infrastructure.

Advanced Analytics & AI: BERT-based NLP models for sentiment analysis (85%+ accuracy), Vertex AI topic modeling across 10 transportation themes, pre-built templates for AI/ML modeling.

Automated Data Pipelines: End-to-end processing from ingestion to enrichment to scoring to visualization, reducing manual effort by 70–80%.

Real-Time Dashboards: Looker Studio visualizations with customizable filtering by region, ZIP code, demographics, theme, sentiment, and time period.

Enterprise-Grade Security & Governance: Deployed within your private cloud account with role-based access controls, ensuring data security, privacy, and control.

LOOKING FORWARD: A NEW STANDARD FOR CONSTITUENT ENGAGEMENT DRIVEN BY AI

This partnership transformed planning from anecdotal feedback to granular insights. It revealed that North residents wanted expansion, South residents wanted affordability, and West residents needed basic access, all while revealing how priorities differed by age and income. By combining AI with the right architecture, Syntasa enabled better decision-making and community outcomes.

The project proved agencies can efficiently process constituent feedback while uncovering equity gaps invisible in aggregate statistics. Shifting the conversation to "what are communities telling us they need?" Syntasa's platform enables agencies to provide relevant services informed by real community needs securely, at scale, and with confidence.

ABOUT SYNTASA: EMPOWERING SLED AGENCIES GLOBALLY

Syntasa empowers Federal, State, Local, and Education (SLED) agencies worldwide with actionable insights for better governance.
Our platform helps agencies:

- **Get a broader view of constituent attitudes and needs** through sentiment analytics.
- **Provide better government services** by understanding digital behavior patterns.
- **Make government services more easily available** with data-driven digital journeys.
- **Draw actionable insights** to address critical challenges from public health to transportation planning.

For more information about Syntasa's Public Sector solutions, visit syntasa.com/public-sector

SYNTASA®

About Syntasa

Syntasa is a security-first Data and AI company specializing in digital behavior and large-scale analytics across government and commercial environments. Trusted by defense and intelligence agencies, government organizations, and global enterprises. Syntasa is a Google Cloud Partner and our software is available in the GCP Marketplace.

