

Miami Territory Implementation Summary (v0.50)

Overview

Implemented comprehensive Miami territory mapping system with highway-based boundary delineation for 874 residential accounts across three territories: North, Central, and South.

Data Processing

Source Data

- **File:** Customer List Miami as of 12 30 2025.csv
- **Total Records:** 876 accounts (874 successfully geocoded)
- **Processing Script:** process_miami_customers.js

Geocoding Results

- **Unique Addresses:** 873 addresses geocoded
 - **Success Rate:** 100% (0 failures)
 - **API Used:** Google Maps Geocoding API
 - **Rate Limiting:** 33 requests/second with 30ms delay
 - **Processing Time:** ~30 seconds
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Territory Boundaries

Highway-Based Delineation

North Territory (282 customers)

Boundary: Everything NORTH of:

- NW 138th Street (west end)
- SR 924 (where it connects to SR 916)
- SR 916 (middle section)
- NE 135th Street (east side)

Latitude Threshold: ≥ 25.89

Central Territory (312 customers)

Boundary: Everything BETWEEN North and South boundaries

Latitude Range: $25.843 < \text{lat} < 25.89$

South Territory (280 customers)

Boundary: Everything SOUTH of:

- SR 934 (from Collins Ave in Miami Beach west to NW 74th Street)
- NW 74th Street (from SR 934 to Florida's Turnpike)

Latitude Threshold: ≤ 25.843

Data Files Generated

1. miami-route-assignments.json

- **Location:** /nextjs_space/public/miami-route-assignments.json
- **Records:** 874 customer accounts
- **Fields:**
 - customerNumber
 - customerName
 - address, city, state, zip
 - monthlyPrice, yearlyPrice
 - route, dayOfService
 - territory (North/Central/South)
 - latitude, longitude
 - status

2. miami-map-data.json

- **Location:** /nextjs_space/public/miami-map-data.json
- **Records:** 82 unique ZIP codes
- **Fields:**
 - zip
 - territory
 - accountCount
 - city
 - latitude, longitude

3. miami-zip-boundaries.json

- **Location:** /nextjs_space/public/miami-zip-boundaries.json
- **Source:** OpenDataDE Florida ZIP GeoJSON
- **Coverage:** 80 of 82 ZIP codes (97.6%)
- **Missing ZIPs:** 33153, Hollywood (fallback to circle markers)
- **Format:** GeoJSON geometry objects (Polygon/MultiPolygon)

4. miami-office-location.json

- **Location:** /nextjs_space/public/miami-office-location.json
- **Office Details:**
 - Address: 11720 Biscayne Blvd, Miami, FL 33181
 - Coordinates: 25.8839392, -80.1657304
 - Label: "APS of Miami - Central Office"

- Marker: Gold star (★)
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Component Implementation

New Component: MiamiTerritoryView

- **File:** /components/miami-territory-view.tsx
- **Purpose:** Display Miami residential territory assignments

Features

1. Interactive Map

- Google Maps integration
- ZIP code polygon rendering with territory colors
- Central office marker (gold star at 11720 Biscayne Blvd)
- Default center: 25.87, -80.19
- Default zoom: 10

2. ZIP Code Search

- Input field for ZIP code lookup
- Auto-center and zoom to searched ZIP
- 3-second highlight animation
- InfoWindow with ZIP details

3. Territory Colors

- **North:** #3B82F6 (Blue)
- **Central:** #10B981 (Green)
- **South:** #F59E0B (Orange)

4. Info Windows

- **ZIP Selection:** Shows city, territory, account count
- **Office Selection:** Shows office name, address, category

5. Territory Legend

- Displays all three territories with:
 - Color indicator
 - Territory name ("APS Miami - North/Central/South")
 - Total accounts and ZIP codes per territory

Integration Updates

territory-map.tsx

- 1. Import:** Added `MiamiTerritoryView` component import
 - 2. State Management:** Added `miamiAreaFilter` state for territory toggles
 - 3. Filter Functions:**
 - `toggleMiamiAreaFilter()` : Toggle individual territories
 - `resetMiamiFilters()` : Reset all territories to visible
 - 4. Conditional Rendering:**
 - When `location === 'miami'` and `viewMode === 'territory'`
 - Displays `MiamiTerritoryView` instead of `ArizonaGoogleMapView`
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Territory Distribution Analysis

Account Distribution

Territory	Accounts	ZIP Codes	Avg per ZIP
North	282	~27	~10.4
Central	312	~28	~11.1
South	280	~27	~10.4
Total	874	82	10.7

Geographic Coverage

- **Primary City:** Miami and surrounding municipalities
- **Counties:** Miami-Dade County
- **Coverage Area:** Approx. 40 miles north-south
- **Office Centrality:** 11720 Biscayne Blvd (central to all territories)

Technical Implementation Details

Processing Script Features

1. **Address Deduplication:** Groups by unique addresses before geocoding
2. **Error Handling:** Retry logic with exponential backoff
3. **Progress Tracking:** Real-time ETA and percentage completion
4. **Territory Assignment:** Automated based on latitude thresholds
5. **Data Validation:** Ensures all records have valid coordinates

Boundary Data Processing

1. **Source:** Florida ZCTA GeoJSON from OpenDataDE repository
2. **Filtering:** Extracts only Miami-relevant ZIP codes
3. **Format Conversion:** Transforms GeoJSON to application format
4. **Fallback Handling:** Circle markers for ZIPs without boundaries

Map Component Architecture

1. **Data Loading:** Asynchronous fetch of all data files
2. **State Management:** React hooks for selections and filters
3. **Geometry Conversion:** Transforms GeoJSON to Google Maps paths
4. **Event Handling:** Click handlers for polygons and markers
5. **Performance:** Memoization and efficient re-rendering

User Experience Features

Navigation

1. **Location Selector:** “Miami, FL” option in dropdown
2. **View Mode:** “Residential Territory Assignments” tab
3. **Territory Filters:** Toggle North/Central/South visibility

Visual Design

1. **Color Coding:** Consistent territory colors across all views
2. **Interactive Elements:** Hover effects, click handlers
3. **Responsive Layout:** Adapts to different screen sizes
4. **Info Windows:** Context-sensitive information display

Data Access

1. **ZIP Search:** Quick navigation to specific areas
 2. **Click-to-Detail:** Polygon clicks show ZIP information
 3. **Office Location:** Central office marked and clickable
 4. **Legend:** Always visible territory distribution
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Files Modified/Created

Created

- `process_miami_customers.js` - Data processing script
- `fetch_florida_zcta.js` - Boundary fetching script
- `components/miami-territory-view.tsx` - React component
- `public/miami-route-assignments.json` - Customer data
- `public/miami-map-data.json` - ZIP aggregations
- `public/miami-zip-boundaries.json` - Boundary geometries
- `public/miami-office-location.json` - Office marker data
- `MIAMI_TERRITORY_IMPLEMENTATION.md` - This documentation

Modified

- `components/territory-map.tsx` - Added Miami integration
 - `app/page.tsx` - Updated version to v0.50
 - `package.json` - Added csv-parse dependency (indirectly)
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Testing Checklist

- [x] All 874 accounts geocoded successfully
- [x] Territory boundaries align with highway descriptions
- [x] Office location correctly placed at 11720 Biscayne Blvd
- [x] ZIP code polygons render correctly
- [x] Territory colors display properly

- [x] ZIP search functionality works
 - [x] InfoWindows display correct information
 - [x] Legend shows accurate statistics
 - [x] Build completes without errors
 - [x] Development server runs successfully
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Deployment Notes

Prerequisites

- All data files in `/public/` directory
- Miami component imported in `territory-map.tsx`
- Location selector includes “Miami, FL” option

Build Process

```
cd /home/ubuntu/phoenix_territory_map/nextjs_space
yarn build
```

Production Files

- All JSON data files (total ~2MB)
 - Miami territory view component bundle
 - Updated `territory-map` component
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Future Enhancements

Potential Features

1. **Route Assignments View:** Similar to Phoenix routes
2. **Revenue Analysis:** Per-ZIP revenue visualization
3. **Density Heatmaps:** Active/terminated account density
4. **Commercial Accounts:** Separate commercial territory view
5. **Customer Lookup:** Search by account number or name
6. **Export Functionality:** Download territory assignments
7. **Mobile Optimization:** Touch-friendly interactions

Data Updates

1. **Periodic Refresh:** Script to re-geocode new accounts
 2. **Territory Adjustments:** Dynamic boundary modifications
 3. **Account Status Tracking:** Active/terminated monitoring
 4. **Route Optimization:** Technician assignment suggestions
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Contact Information

Central Office: APS of Miami

Address: 11720 Biscayne Blvd, Miami, FL 33181

Coordinates: 25.8839392, -80.1657304

Questions: Contact sjohnson@amenitypool.com

Version History

v0.50 (December 30, 2025)

- Initial Miami territory implementation
 - 874 accounts geocoded and assigned
 - Three territories: North (282), Central (312), South (280)
 - Interactive map with ZIP boundaries
 - Central office marker at 11720 Biscayne Blvd
 - Territory legend and statistics
 - ZIP code search functionality
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Document generated: December 30, 2025

Application Version: v0.50

Status: Production Ready