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Morrison Springs at Dayton Boulevard Intersection Spot Safety Improvements

Overview

This safety analysis memorandum evaluates the intersection at Dayton Boulevard and Morrison Springs Road for operational and safety improvements, specifically for pedestrian and bicycle accessibility. The report outlines existing conditions, assesses safety concerns, and provides both short-term and long-term recommendations for mitigating risks associated with pedestrian crossings and vehicular movement.

Recommended Improvements

The report identifies multiple corrective measures aimed at increasing pedestrian safety, managing vehicle flow, and reducing crash frequencies. The recommendations are divided into **short-term** (quick deployable measures) and **long-term** improvements.

Short-Term Improvements

1. **Enhanced Signage & Markings:**
 - Install additional “*Ahead*” warning signs below existing Rapid Rectangular Flashing Beacon (RRFB).
 - Install “*Yield Here to Pedestrians*” signs at key locations to clarify right-of-way.
 - Adjust signal timings to ensure better clearance intervals for vehicles exiting the intersection.
 - Restripe pavement markings to enhance lane visibility and guidance.
2. **Pedestrian Safety Enhancements:**
 - Install RRFB assemblies on both sides of the pedestrian crosswalk across the southbound right-turn lane.
 - Modify curb extensions with reflective striping to reduce pedestrian crossing distances and slow turning vehicle speeds.
 - Relocate the existing pedestrian crossing in the northwest corner to improve visibility and reduce sight distance issues.

3. Traffic Flow Optimization:

- Coordinate signals along Dayton Boulevard between Leawood Avenue and Ashland Terrace to improve vehicular progression.
- Restripe and add pavement markings on Morrison Springs Road to prevent last-second lane changes and reduce sideswipe crashes.

Long-Term Improvements

1. Roadway Modifications:

- Install new LED street lighting on the southwest corner to increase nighttime visibility.
- Relocate the crosswalk and pedestrian pushbuttons in the northwest corner to enhance sight distance and pedestrian awareness.

Traffic Safety Impacts

The crash analysis spanning five years (2019–2024) found that **rear-end (33%) and angle crashes (26%)** were the most frequent types of collisions. The study also noted that crashes occur predominantly in **clear daylight conditions** (59%) and that **79% of crashes resulted in property damage only, without injuries**.

Key safety risks highlighted in the report include:

- **High-speed vehicle movement** in the southbound channelized right-turn lane, contributing to improper following distances and last-minute lane changes.
- **Limited pedestrian visibility** near the northwest corner due to existing fencing and roadway curvature.
- **Queue spillback along Morrison Springs Road**, increasing the likelihood of rear-end collisions.

Estimated Daily Vehicle Flow

The memorandum does not specify an exact count of vehicles passing through the intersection daily, but given its classification as a **signalized three-legged intersection with commercial frontage**, traffic volumes are likely to be **high**, especially during peak hours.

Jersey Barrier Installation (Page 4)

One significant recommendation is the **installation of temporary water-filled Jersey barriers** along the east sidewalk frontage of Dayton Boulevard. These barriers serve as a **crash protection measure** for pedestrians and businesses until a more permanent solution—such as a road diet—is implemented. The report highlights their benefits:

- **Increased visibility** through bright, reflective coloring.
- **Customizability** for signage integration.

- **Durability & cost-effectiveness**, requiring minimal maintenance.
- **Ease of storage & mobility**, allowing quick deployment and removal when necessary.

Long-term recommendations suggest replacing these temporary Jersey barriers with **steel crash bollards**, which offer more permanent pedestrian protection while allowing flexible removal when needed.

Other Items of Significance

- The study identifies **high-crash concentration areas**, particularly in the **eastbound lanes of Morrison Springs Road and southbound right-turn channelized lane on Dayton Boulevard**.
- Signal **timing adjustments** are proposed to **improve clearance intervals** and minimize intersection blocking.
- The **use of flexible delineators to reduce conflict points between opposing left-turn lanes** is recommended along Dayton Boulevard.

Conclusion

The proposed changes aim to improve pedestrian visibility, reduce vehicle speeds, and enhance intersection efficiency. The recommended signage, markings, and signal modifications offer **immediate improvements**, while longer-term adjustments such as lighting enhancements and bollard installations will provide sustained safety benefits. The City of Red Bank should assess these recommendations for feasibility and prioritization in implementation efforts.