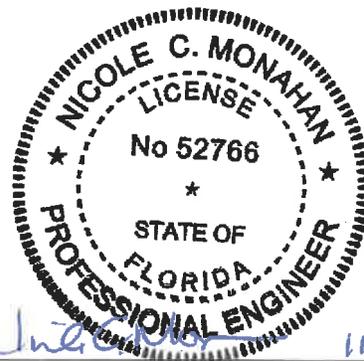




**City Project No. 16-936**

**Yellowbird Street Improvements  
Bald Eagle Drive to N. Collier Boulevard  
City of Marco Island, Florida**

**Pavement Survey Findings and  
Recommendations**



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# Pavement Survey Findings and Recommendations

## For

### Yellowbird Street, Marco Island, Florida

Yellowbird Street is a local, two lane roadway located within the city limits of Marco Island. The street runs primarily north and south between North Collier Boulevard and Bald Eagle Drive and the surrounding properties are primarily developed single family homes. Yellowbird Street is a 19-20' wide paved roadway with sidewalks on either side, overhead utilities running along the east right-of-way line and underground utilities running the length of and across the right-of-way in various locations. This road serves as a bypass for traffic from N. Collier Boulevard to Bald Eagle Drive. The nature of the traffic observed on the road is much heavier than the neighboring residential areas would generate. A heavy percentage of truck traffic was observed during the pavement evaluation.

#### **Roadway Evaluation**

On October 28, 2016, Hole Montes conducted a site assessment of the bituminous pavement area of Yellowbird Street. Photographs of areas of concern are included in this report. Overall the pavement was in poor to fair condition.

Yellowbird Street exhibits several kinds of pavement distress along the length of the corridor. These distresses include longitudinal cracking, edge cracking, patching and potholes, reflective cracking, rutting and shoulder drop off.

*Fatigue, Block and Longitudinal cracking* – Along much of the roadway there was evidence of fatigue, block and longitudinal cracking, both in and out of the wheel path. Some of the cracking should be labeled as moderate to high in severity. The following pictures reflect areas along the length of the roadway. The failures are not limited to one isolated area but are widespread. In reviewing the geotechnical report it appears that the base material is non-existent in several areas along the roadway. This is contributing to the pavement distress shown in the pictures.









***Edge cracking*** – Edge cracking was observed along with the previous mentioned cracking. In some areas this edge cracking has lead to depressions along the outside edge of the roadway.

*Rutting* – Rutting was also observed along the length of the roadway, most noticeably at the south end. Due to the high percentage of commercial/larger vehicles observed on the roadway, it is probable that the original pavement thicknesses were not sufficient for the current loading.

*Patching/Potholes* – There are two large patches that appear to be fairly recent in the northern half of the roadway. These patches appear in good condition.

Within the areas exhibiting severe cracking, there were several patches and spot repairs that had been made and a couple of places in need of patching. In a couple of locations, there are chunks of asphalt that have delaminated and are simply sitting in the hole without being bonded to the layer below. These failures allow for water intrusion into the underlying layers of asphalt which further degrades the pavement section.







***Reflective cracking*** – In several areas reflective cracking was noted. These areas appear to be in locations where past utility work was completed and there may have been restoration of a trench crossing.



*Lane to shoulder drop off* – At the north end of Yellowbird Street, in the last block before North Collier Boulevard, it was noted that the west shoulder had a significant drop off from the travel lane. This drop off was measured at 3 inches. Due to this drop off, the pavement at the edge line was starting to deteriorate and break off. What appears to be a layer of shell asphalt was visible underneath the asphalt pavement as seen in the photos. This layer of shell asphalt was noted in several of the pavement cores that were taken along the roadway.



*Uneven Settling around manholes and drainage structures* – Many times when precast structures are installed in pavement areas, compaction around the structure is hard to obtain and subsequent uneven settling occurs over time. This can cause dips or cracking in the vicinity of the structure. This problem was noted in several areas along Yellowbird Street as evidenced in the following photos.



*Pipe crossing* – In the vicinity of 543/553 Yellowbird Street, there is a patch on the roadway that has been placed since March 2015. The patch appears to be the result of a pothole/sinkhole in the travel lane. From our observations, the pipe crossing Yellowbird Street is a CMP that may have failed or have a breach and caused a sinkhole in the travel lane. It is recommended that this pipe be replaced as part of the proposed roadwork. If additional CMPs exist under the roadway, it is recommended that they also be replaced.



### *Recommendations*

Overall the pavement is in poor to fair condition with extensive cracking, rutting and some drop-offs. As the geotechnical investigation found little to no base material on several of the core samples and since the general use of this roadway is more intense than neighborhood residential uses, it is recommended that the roadway be rebuilt with an adequate pavement section to support the current loadings. Milling and resurfacing with a Marshall Mix asphalt would not provide the structural stability necessary to support the current loading of the road in the long term.

Due to the presence of numerous old asbestos cement utility lines, it is recommended that vibratory compaction not be used unless the utility lines are to be replaced with any road construction. Using an asphalt base material (ABC) with a static roller would minimize, but not eliminate, the chances of damaging the existing utilities. Prior to construction it is recommended that all utility lines be potholed to verify location, depth and condition.