



## PROJECT BRIEF

# NASA Bridge

## Dynamic Assessment of Multi-Span Causeway Bridge

### PROJECT PROFILE

CLIENT:  
UCF

LOCATION:  
Titusville, FL

#### VALUE:

- Establishing the baseline dynamic behavior before retrofitting
- Validating the expansion joint performance
- Identifying the differences in identical spans to be investigated further and evaluated after retrofitting

#### SERVICES PROVIDED:

- S-lynks short term monitoring
- Determination of baseline dynamic characteristics
- Difference in resonant modes of identical spans indicating need for further inspection

“S-lynk sensors have very low signal noise bandwidth. They can capture the dynamic response data at a very low-frequency. When these sensors are employed for SHM purposes on a structure, no additional and high level excitation is needed.”



### S-LYNKS SOLUTION DEPLOYED ON CAUSEWAY BRIDGE

Geocomp, with University of Central Florida, deployed S-lynks solution to selected spans of NASA causeway bridge located near Kennedy Space Center. The scope of work included:

- Investigation of interdependency and coupling of pre-stressed concrete single spans
- Establishing the baseline dynamic behavior before the retrofitting for future validation of the post-retrofitting behavior
- Three single spans were tested individually followed by three consecutive spans tested together

After analysis of the data, Geocomp was able to identify:

- The baseline dynamic characteristics of each tested single and multi-span to be compared with results after retrofitting and the expansion joints working as expected.
- Differences in some of the resonant modes from identically built spans indicated need for further inspection



### BACKGROUND

NASA bridge is a highway bridge that has 56 pre-stressed concrete girders having a composite reinforced concrete slab and the only bascule bridge in Florida. The East Bound (EB) and West Bound (WB) of the bridge consist of two separate bridges constructed in 1964. The spans are composed of AASHTO Type II Girders, spaced at 6'-6" O.C. with a 7" cast in place deck and 2" wearing surface. The spans of the bridge are identical in terms of boundary conditions and geometric and material properties. It was expected that the structural parameters of the spans would be similar based on their design characteristics.