

## **Executive Summary of 2021 Infrastructure Reports**

### *Bridges*

DOTE bridge engineers inspect and report on the condition of 238 bridges. Seventy-one (71) of those bridges are City-owned and are the direct responsibility of the City Bridge Rehabilitation Program.

Bridges in the City Bridge Rehabilitation Program are inspected, evaluated and rated on an annual basis. The bridges receive a rating on a 0-to-9 scale, with 6 being “satisfactory” and 7 being “good.” The goal is to ensure assets included in the City Bridge Rehabilitation Program maintain a weighted average of 6 (“satisfactory”). In 2021, that goal was met with a weighted average of 6.85.

The City Bridge Rehabilitation Six Year Plan included in the report demonstrates that the current level of City funding is insufficient to adequately address all the maintenance and replacement needs of existing bridges. Reliance on outside funding has been and will continue to be necessary to achieve program goals.

### *Pavements*

The City has more than 2,900 lane miles of paved roadways. Since 2015 all City streets (pavements) are inspected and rated on an annual basis using automated data collection, which is collected via GPS-based digital imaging and processing equipment. By utilizing this process, the City’s consultant can assign each segment of roadway a pavement condition index (PCI) rating ranging from 0-100. DOTE uses PCI ratings to make decisions regarding planning for street rehabilitation and roadway priorities. The lowest-rated streets receive top priority.

Due in part to a lack of funding, the pandemic, and rising costs, DOTE did not meet the program goal to rehabilitate 100 lane miles a year for 2021. DOTE did manage to rehabilitate 42 lane miles in CY21 and performed no preventive maintenance surface treatments. A pavement condition inspection and rating was performed in 2021, the weighted city average PCI is a 67.

### *Traffic Infrastructure*

**Traffic Signals** - DOTE is responsible for maintaining traffic signals, street lighting, pavement markings and traffic control signage in the public right-of-way. The City has approximately 6,500 intersections, more than 800 of which have a traffic signal and 91 school flashers. DOTE’s Traffic Engineering Division rebuilds aging infrastructure based on a 25-year life cycle schedule. The average age of the traffic signals in the City’s system is 24 years and many signals are at the end of their service life.

**CTCS** - The Traffic Engineering Division operates and maintains the Computerized Traffic Control System (CTCS). The CTCS is a network that interconnects traffic signals and pedestrian walk lights across Cincinnati. The system enables DOTE traffic engineers to communicate and diagnose problems with signalized intersections. The CTCS system is divided into 16 geographical zones. Only three of the 16 zones have been updated with digital communications equipment. The other zones have obsolete communications equipment that is more than 30 years old, which exceeds its estimated life of service.

**Electric Streetlighting** - The electric lighting system used across Cincinnati is broken into three categories: City-owned lights (4,500 fixtures), City-owned assessed lights (4,000 fixtures), and Duke Energy-owned lights (21,000 fixtures). Many of the light fixtures in each of the three categories have been converted to LED over the past five years. All City-owned lights were converted to LED in 2014, using a performance contract with Honeywell. Approximately 700 City-owned assessed light fixtures have been converted to LED as have approximately 600 Duke Energy-owned light fixtures. While the lights have been converted, the lighting equipment itself, regardless of category, has exceeded its serviceable life and is more than 30 years old.

**Gas Streetlighting** - The City has approximately 1,100 gas streetlights spread across all Cincinnati neighborhoods. In general, these assets are in poor/failed condition and are more than 40 years old, which is well past the suggested service life for this technology.

**Signs and Paint** - The City has more than 985 miles of paved streets with traffic control signs (i.e. stop signs, yield signs, etc.) and pavement markings. The roadways contain approximately 300,000 traffic control signs, 20,000 street name signs, and about 750 miles of pavement marking lines.

### *Retaining Walls and Landslides*

A significant number of retaining wall and landslide stabilization projects were completed in 2020 and 2021. The most notable project being the Columbia Parkway Hillside Stabilization Project which began construction in June of 2019 and was completed in September of 2021. DOTE is responsible for 1,619 retaining walls having a combined total length of 53.8 miles. Retaining walls are funded from the same capital funds used for landslide stabilization projects. Landslide projects receive top priority over retaining wall replacement and repairs due to the fact landslides lead to a greater potential of road closures, infrastructure damage and threat to public safety.

The Wall Stabilization & Landslide Correction Six Year Plan included in the report demonstrates that the current funding is not sufficient to adequately address the maintenance and replacement of existing retaining walls and the stabilization of

landslides which impact the roads. The Program is highly dependent on securing outside funding. Retaining walls and landslide locations will continually be inspected and evaluated. The Program will prioritize allocated funding to address the most critical locations given the constraints of the budget.