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10/17/2016	1	City Council	Approved	Pass

Resolution to Approve New Streetlight Installations and Smart Lighting System Preparation
 In February 2015, City Council lifted a moratorium on new streetlighting, and subsequently designated \$200,000.00 for additional streetlights in the following two years' budget processes. City staff then developed a comparative evaluation model for new streetlight installations while allowing time for location requests to be received and incorporated into this model. Since the lifting of the streetlight moratorium, seventeen (17) separate requests have been received representing an estimated seventy-eight (78) streetlights. Certain requests pinpointed an exact location (such as intersections or crosswalks); while other requests spoke of general areas or unlit streets that required using existing City spacing and lighting standards to estimate a total streetlight count.

Staff from Public Works, Project Management, and Systems Planning developed and refined the scoring criteria and evaluation model used for prioritizing requests. The weighted criteria included in the model are: Crash histories in the location vicinity; proximity to any transit stop; ownership of streetlight (Utility or City); proximity to known activity generators (e.g., schools, high traffic businesses); potential for conflict due to existing on-road facilities (bike lanes and crosswalks); whether current vicinity lighting meet current City standard specifications; street classification (local, collector, or arterial); and, type of request (individual/s or by an organized group).

Below are staff's recommendations for which request locations can be serviced with the available \$200,000.00 of funding, recognizing that costs may vary by site and that there may be an opportunity to accommodate a next tier of lights if costs come in below estimates. The approach to be taken is for outside contractors to complete the installations, with City staff performing some components of the work depending on factors discovered during installation. Public Works staff time/materials will need to be incorporated as a cost from the designated funds. Following approval, the streetlight staff team will be procuring a contractor(s) to install streetlights at the following locations with potential that certain locations will be included within other ongoing or expected City project footprints and timelines (though not paid from those project budgets).*

First Tier streetlight locations based on available funds:

- **Nixon Road**, immediately south of Dhu Varren Road - 9 City lights (Scoped and built following recommendations of the intersection and corridor projects near this location)
- **Dhu Varren Road**, between Pontiac Trail and Nixon Road, at unlit crosswalks - 8 City lights
- **Washtenaw Avenue & Platt Road**, crosswalk/intersection - 3 lights (2 City, 1 DTE anticipated)
- **Division Street**, half block north of Kingsley - 1 DTE light
- **East University Avenue**, immediately south of Hill Street - 2 DTE lights (anticipated on existing utility poles)

Next Tier streetlight locations (if costs come in below estimates):

- **Fuller Road**, crosswalk at Fuller Pool, south end of the separated boulevard - 1 City light (possible relocation of nearby pole)
- **Fuller Road**, crosswalk at Huron High School & Gallup Park entrance - 2 DTE lights
- **Geddes Avenue**, crosswalk near Arboretum entrance - 2 DTE lights (anticipated on existing utility poles)

Depending on the location and proximity to either DTE's existing streetlight system or opportunities to connect as City-owned streetlights, the ultimate ownership of the light may vary once implementation begins; but anticipated ownership based on connection feed points and existing conditions is indicated above. To contain long-term costs, City-owned lights are preferred despite a higher upfront cost. All new installations will be LED technology, consistent with the City's commitment to sustainability.

An important consideration for implementing a new streetlight program is recognizing the views of immediately impacted residences. Some individuals may not want streetlights, despite the interest of others who see a lack of lighting as being an issue. This is particularly the case in completely unlit areas where people are not used to, or may prefer the absence of streetlighting. Nearby residents affected by a new streetlight will be notified and given the opportunity to oppose an installation, and objections will be considered by staff when weighed against merits for new lighting.

Smart LEDs Applications

In its resolution allocating funds for new streetlighting, City Council also requested consideration of "Smart" LED applications in any program for new streetlights. There are a number of features either inherent with an LED luminaire or that can be incorporated into specialized designs of an integrated multi-light system. A short summation of the current state of opportunities with Smart LEDs is attached separately.

Presently, there are important considerations and limiting factors regarding how Ann Arbor can incorporate aspects of Smart LEDs. One significant application, dimming of light levels at times of night or in off-roadway applications, is limited due to the way rates are presently structured. DTE Energy does not have a tariff that includes dimming, and the majority of streetlights are on a "flat" or non-metered rate that cannot account for dimming as a means of reducing electricity-draw or charges for this service. So, while some energy savings could be achieved, no ability to capture the savings to offset the installation and maintenance cost currently exists in rates is available. However, this may

change in the future as the City continues to work closely with DTE and state regulators on increased adoption of LED streetlighting throughout DTE's service territory. The same issue applies to either instant on/off functionality or motion sensing that might allow energy conservation and improved fixture performance. For its part, DTE is planning to pilot Smart LED applications in 2017, with a focus on 1) metering capability and overlap potential with its existing AMI/Smart Meter platform, 2) On/Off controls, and 3) Automated outage notification. It is not yet known if Ann Arbor will be selected as one of the customers to participate in this pilot.

In the next 8-12 weeks, Public Works staff is testing available Smart LED features on a portion of the City-owned downtown decorative LEDs and hopes to learn much from this experience. Going forward, the City and DTE are making an important design consideration for all new lights, which is making the connection ports "Smart ready" by using *NEMA open-protocol 7-pin receptacles*. These allow for future intelligence capabilities and capacity, and is an industry-wide recommendation for preparing for a more integrated and communication-ready streetlight system. As opportunities for increased deployment of a Smart LED network of streetlights becomes viable within the DTE service territory, staff will inform the City Administrator.

Sustainability Framework

Additional lighting has potential to advance the Sustainability Framework goal of Safe Community while negatively impacting the goal of Energy Conservation, excepting that all new installations will be LED technology.

Budget/Fiscal Impact

Funds for this work have been established by the two most recent City Council budget amendments, reserving \$200,000.00. These funds cover installation costs only. Funds do not cover long-term maintenance and eventual replacement needs for new installed equipment that are an addition to the current system. Ongoing annual maintenance, energy, and annual equipment replacement costs are estimated at approximately \$40.00 per City light in current dollars and are a maintenance cost to the general fund. A recent evaluation of the costs for new City-owned streetlight installations estimated the overall life costs that include the initial equipment, replacement, maintenance and anticipated increases in energy costs are in exceedance of \$40,000.00 per streetlight.

Prepared by: Nathan Geisler, Systems Planning

Reviewed by: Craig Hupy, Public Services Area Administrator

Approved by: Howard S. Lazarus, City Administrator

Whereas, Within the City of Ann Arbor there are over 7,000 streetlights operating from dawn to dusk;

Whereas, The City owns and maintains over 2,500 streetlights with the local utility, DTE Energy, owning and maintaining the remaining streetlights;

Whereas, In order to contain growing costs to the City's General Fund, a moratorium on added streetlights was instituted in fiscal year 2006, and this moratorium was later lifted in February of 2015 by act of City Council;

Whereas, Following lifting of the moratorium City staff collected requests for new or additional streetlights received through various mediums and developed a model used to evaluate and prioritize requests based on a variety of relevant criteria;

Whereas, City Council, through amendments to the final approved budgets in the last two fiscal years (FY16 and FY17), allocated a total of \$200,000.00 for additional streetlight installations and requested recommendations for new installation locations based on requests;

Whereas, Based on estimated costs from recent road projects involving upgraded streetlights and estimates from DTE Energy, the balance of the authorized funds has been allocated to request locations based on criteria in the prioritization model;

Whereas, In the amended budget for FY17 any streetlight program was requested to include opportunities for technologically “smart” systems based-primarily off of new and emerging solid-state LED technologies;

Whereas, Based on consultation with area experts, research, and manufacturers, a smart readiness component to new LED streetlight installations exists and can help enable future intelligence applications as it becomes viable and properly attributable in streetlight rate-setting initiated by the utility and approved by the Michigan Public Service Commission (MPSC); and

Whereas, It is the recommendation of Public Works staff that installation of new lights be conducted by an outside party with City staff assisting as necessary and a solicitation would follow approval to proceed with new streetlight installations;

RESOLVED, That the following First Tier streetlight request locations within and prioritized by the new request model be approved for new streetlighting:

- **Nixon Road**, immediately south of Dhu Varren Road
- **Dhu Varren Road**, between Pontiac Trail and Nixon Road, at unlit crosswalks
- **Washtenaw Avenue & Platt Road**, crosswalk/intersection
- **Division Street**, half block north of Kingsley
- **East University Avenue**, immediately south of Hill Street;

RESOLVED, That if upon completion of the above streetlight locations funds remain in the \$200,000.00 established by previous Council actions, the following Next Tier streetlight locations be approved for new streetlighting:

- **Fuller Road**, crosswalk at Fuller Pool, south end of the separated boulevard
- **Fuller Road**, crosswalk at Huron High School & Gallup Park entrance
- **Geddes Avenue**, crosswalk near Arboretum entrance;

and

RESOLVED, That all luminaries be LED and to the fullest extent possible “smart ready” through NEMA open-protocol 7-pin receptacles or equivalent.