Memorandum

TO: City Commission
FROM: Andrea Arnold, City Manager
DATE: May 2, 2019
RE: Fiber Optic Network Proposal

The purpose of this memorandum is to recommend approval of a project budget of $2,350,000 and an agreement with the low bidder, Network Cabling Infrastructures, Inc. (NCI) of Duluth, Georgia, in an amount not to exceed $1,996,231, for construction of an underground fiber ring. The fiber ring will provide a modern fiber optic network for all City and City Schools of Decatur facilities.

In January 2018, the City initiated a project to replace the City’s fiber optic communications network. The current fiber network was installed in 2000 by MediaOne, now Comcast. A replacement of the nearly 20 year old network is recommended in order to add sites to the network, develop a redundant/self-healing ring as opposed to the current hub and spoke design, and provide the necessary infrastructure for video, wifi and smart cities technology that is not currently available. If the City opted to retain the existing network, the annual cost would be roughly $115,000 plus additional costs to add 8 City sites to the network. During the network design phase, discussions with City Schools of Decatur resulted in the development of two network plans for the Request for Proposals, Design Option 1A (City sites only) and Design Option 3A (City and School sites), both of which assumed a combination of underground and aerial fiber.

In October 2018, the City issued a Request for Qualifications which resulted in three qualified bidders. All three qualified bidders responded to the Request for Proposals. The bids were analyzed based on a combination of technical and cost proposals. Base bids for construction are shown below for each design option. Estimates for Design Option 3B (City and School sites, all underground) were developed using per unit costs from the bidders.

<table>
<thead>
<tr>
<th>Bidder</th>
<th>NCI</th>
<th>GTS</th>
<th>ComTran</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Option 1A</td>
<td>737,627</td>
<td>907,110</td>
<td>1,056,680</td>
</tr>
<tr>
<td>Design Option 3A</td>
<td>992,019</td>
<td>1,403,719</td>
<td>2,037,137</td>
</tr>
<tr>
<td>Design Option 3B</td>
<td>1,996,231</td>
<td>2,804,730</td>
<td>3,941,409</td>
</tr>
</tbody>
</table>
It is recommended that the City Commission approve a contract for construction of the fiber network with the low bidder, NCI, in the amount of $1,996,231. The network is designed to provide a single 288-count fiber optic cable network that includes 14 City and 10 school sites with fiber to be placed underground. This is network Design Option 3B (see attached). NCI specializes in aerial and underground cabling systems. Relevant experience includes comparable fiber network projects for the University of Georgia, the City of Irving, Texas, and the Georgia Ports Authority. If approved, construction is expected to start in June 2019 and should be complete within 12-14 months.

It is important to consider estimated annual maintenance costs when making the decision to install aerial fiber or to place it underground. The initial construction costs for buried fiber are significantly higher than aerial, but after 10 years, the total cost of ownership including annual maintenance costs is estimated to be $2,869,077 for Design Option 3B (all underground) versus $3,011,834 for Design Option 3A (aerial/underground combination). The annual maintenance costs were provided by the City's consultants based on their extensive knowledge of fiber networks.

Recurring Maintenance Costs

<table>
<thead>
<tr>
<th>Year</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Year 6</th>
<th>Year 7</th>
<th>Year 8</th>
<th>Year 9</th>
<th>Year 10</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerial/Buried*</td>
<td>140,321</td>
<td>144,531</td>
<td>148,867</td>
<td>153,333</td>
<td>157,933</td>
<td>162,671</td>
<td>167,551</td>
<td>172,577</td>
<td>177,755</td>
<td>183,087</td>
<td>1,608,624</td>
</tr>
<tr>
<td>Buried</td>
<td>46,679</td>
<td>48,079</td>
<td>49,522</td>
<td>51,007</td>
<td>52,538</td>
<td>54,114</td>
<td>55,737</td>
<td>57,409</td>
<td>59,132</td>
<td>60,906</td>
<td>535,123</td>
</tr>
</tbody>
</table>

*assumes no extreme weather events

In addition to support and maintenance costs, utility pole made ready work is required for aerial fiber. The coordination with multiple providers on the utility poles is time-consuming and can result in months long delays that are out of the control of the contractor. Since the City will likely be paying for network connectivity during the construction, there is also a cost associated with any delay. The total cost of ownership over a 10-year period is shown below for the aerial/underground design and underground only design.

<table>
<thead>
<tr>
<th></th>
<th>3A(aerial/underground)</th>
<th>3B (underground only)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction</td>
<td>992,019</td>
<td>1,996,231</td>
</tr>
<tr>
<td>Make Ready</td>
<td>158,081</td>
<td>0</td>
</tr>
<tr>
<td>Courthouse Cabling</td>
<td>50,000</td>
<td>50,000</td>
</tr>
<tr>
<td>CSX Drawings/Fees</td>
<td>21,000</td>
<td>21,000</td>
</tr>
<tr>
<td>Project Management</td>
<td>60,000</td>
<td>60,000</td>
</tr>
<tr>
<td>Contingency</td>
<td>122,110</td>
<td>206,723</td>
</tr>
<tr>
<td><strong>TOTAL PROJECT</strong></td>
<td><strong>1,403,210</strong></td>
<td><strong>2,333,954</strong></td>
</tr>
<tr>
<td>10 YEAR SUPPORT COSTS</td>
<td>1,608,624</td>
<td>535,123</td>
</tr>
<tr>
<td>Total Cost of Ownership (10 years)</td>
<td>3,011,834</td>
<td>2,869,077</td>
</tr>
</tbody>
</table>

Based on the estimated costs identified above, it is recommended that the City Commission approve a project budget in the amount of $2,350,000.
At their April 16 meeting, the Board of Education for the City Schools of Decatur authorized the Superintendent to enter in a memorandum of understanding for the joint construction of the fiber network. It is recommended that the City Commission authorize the City Manager to enter into the same memorandum of understanding with the City Schools of Decatur memorializing the intent of the school system to contribute 28% of the total project related costs, which is approximately $658,000. The net cost to the City after the school system contribution is $1,692,000.

The Georgia Municipal Association (GMA) has confirmed that this project is eligible for direct lease financing over a period of 10 years. It is expected that this network will serve the City’s needs for at least 20 years, but financing beyond 10 years is not recommended. It is recommended that the City Commission authorize the City Manager to pursue lease-purchase financing through GMA.

In summary, to move forward with this collaborative project between the City and City Schools of Decatur, the following actions are recommended:

- Approve a project budget in the amount of $2,350,000.
- Approve contract with NCI in an amount not to exceed $1,996,231.
- Authorize the City Manager to enter into a memorandum of understanding with the City Schools of Decatur regarding shared use of the fiber optic network.
- Authorize the City Manager to pursue lease-purchase financing of this project through the Georgia Municipal Association.
Decatur Fiber Network Design Option 3B

- City & School Locations
- Fiber Ring Only
- Underground and Aerial

City Locations:
1 - City Hall
2 - Police/Beacon/Ebster
3 – Fire Station 1
4 – Fire Station 2
5 - Public Works/Bldg B
6 - UMCH Admin & Gym
7 – Decatur Rec Ctr
8  - Decatur Cemetery
9 – Glenlake Park
10 - McKoy Park
11 – Oakhurst Park
12 – Decatur Visitors Ctr
13 – Courthouse
14 – Conference Ctr

School Locations:
a - 4/5 Academy at 5th
b – College Heights Eclc
c - Winnona Park Elem
d – Oakhurst Elem
e – Renfroe Middle Sch
f – Decatur High Sch
g – Talley St (new sch)
h – Glennwood Elem
i – Clairemont Elem
j – Westchester Elem

Route = 14 miles (approx.)