



Minneapolis Street Lighting Policy

Prepared By Public Works
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The Minneapolis Street Lighting Policy was written to address four key issues: plan, standards, process and funding.

Plan

The Street Lighting Plan portion of the Policy addresses that there are three different area types Pedestrian, Central Business District-Centroid, and Residential. The areas were defined using “Access Minneapolis” as a guide. Each area has different lighting requirements due to the area usage and a different process for addressing street lighting. Area types may be changed following a neighborhood initiated process. A map has been created to show the areas.

Standards

Street lighting in Minneapolis must meet performance, material, and equipment requirements to be considered standard street lighting. Performance requirements are based on the Illuminating Engineers Society guidance. The lighting performance metrics that are considered by the City in designing lighting systems are: lighting levels (footcandles), uniformity (contrast between bright and dark spots), and veiling luminance (glare). Street lighting standards also include material and equipment requirements that are based on durability, workability, and cost of the equipment. Equipment used for street lighting must be approved by the Minneapolis Public Works Department.

Process

Street lighting will be installed with street reconstruction projects in all area types. There is the opportunity for affected property owners to opt-out of installations in Pedestrian, CBD, and Residential areas. The process to opt-out is done by a one-phase petition. Areas that are supportive of installing a stand-alone street lighting project must follow a two-phase petition process.

Phase 1 of the petition process is initiated by the affected properties. Phase 2 of the petition process is a mailing that is prepared by the City of Minneapolis and sent to all affected property tax payers on record. The required approval percentage for the petition to be considered to be successful is 35%, or greater, for Phase 1 and 70%, or greater, in Phase 2. Only the Phase 2 portion of the petition process will be used when the street lighting project is concurrent with a street reconstruction project. Street lighting will also be considered as part of major developments. Lighting systems that reach the end of service life will be replaced at the cost of the adjacent properties if supported by those property owners. When street lighting reaches the end of service life the area will follow a modified Phase 2 petition to gather support of the replacement or the removal of the lighting system.

Funding

Street Lighting installations and removals where necessary, are funded by a Uniform Street Lighting Assessment (USLA) charged to the adjacent assessable properties in the project area. These assessments can be “bought down” with neighborhood, grant, or other non-city funding sources. Operation and Maintenance of street lighting systems that are installed using Minneapolis standards for performance, design, and material is funded by the City’s general fund.

SECTION 1

Minneapolis Street Lighting Plan

The Minneapolis Street Lighting Plan is comprised of three different area types: Residential, Pedestrian, and Central Business District- centroid. These areas have different lighting needs, where the lighting environment for Residential is most basic while the CBD presents an environment that is more complex and the lighting needs are greater. Identification of these areas is primarily set by the city's Ten Year Action Plan (Access Minneapolis). Access Minneapolis identifies high pedestrian activity areas and these areas are illustrated on the following Area Map.

The map identifies the boundaries for CBD and Pedestrian areas. The CBD is located in the downtown core while Pedestrian areas are spread throughout the city and identified on the map as Activity Centers, Commercial Nodes and Pedestrian Priority Corridors. Areas not identified by boundaries on the map are considered to be Residential areas. Parkways are identified on the map and have a lighting plan as approved by the Minneapolis Park and Recreation Board. Alleys are not shown on the map and shall remain a wood pole system.

Pedestrian areas provide for a greater scrutiny, as these areas are often located within Residential areas and are not confined to one particular segment of the City. To better identify these areas, consideration must be given to the factors that conclude a street lighting need that is above that of a Residential area. These factors include defining Pedestrian areas as meeting one or more of the three listed:

1. Activity Centers – A place that supports a wide range of commercial, office, and residential uses.
2. Neighborhood Commercial Node – An area comprised of a handful of small and medium sized businesses focused around one intersection.
3. Pedestrian Priority Corridor - Any of the below listed areas/corridors, streets that serve pedestrian generators, or segments that fill gaps, or make connections, in the system
 - Commercial Corridors – A street that has traditionally served as a boundary connecting a number of neighborhoods and serves as a focal point for activity.
 - Community Corridors – A street that supports new residential development from low to high density in specified areas, as well as increased housing diversity in neighborhoods.
 - Primary Transit Network Street – Network of all-day transit with at least 15 minute frequency for 18 hours of the day.

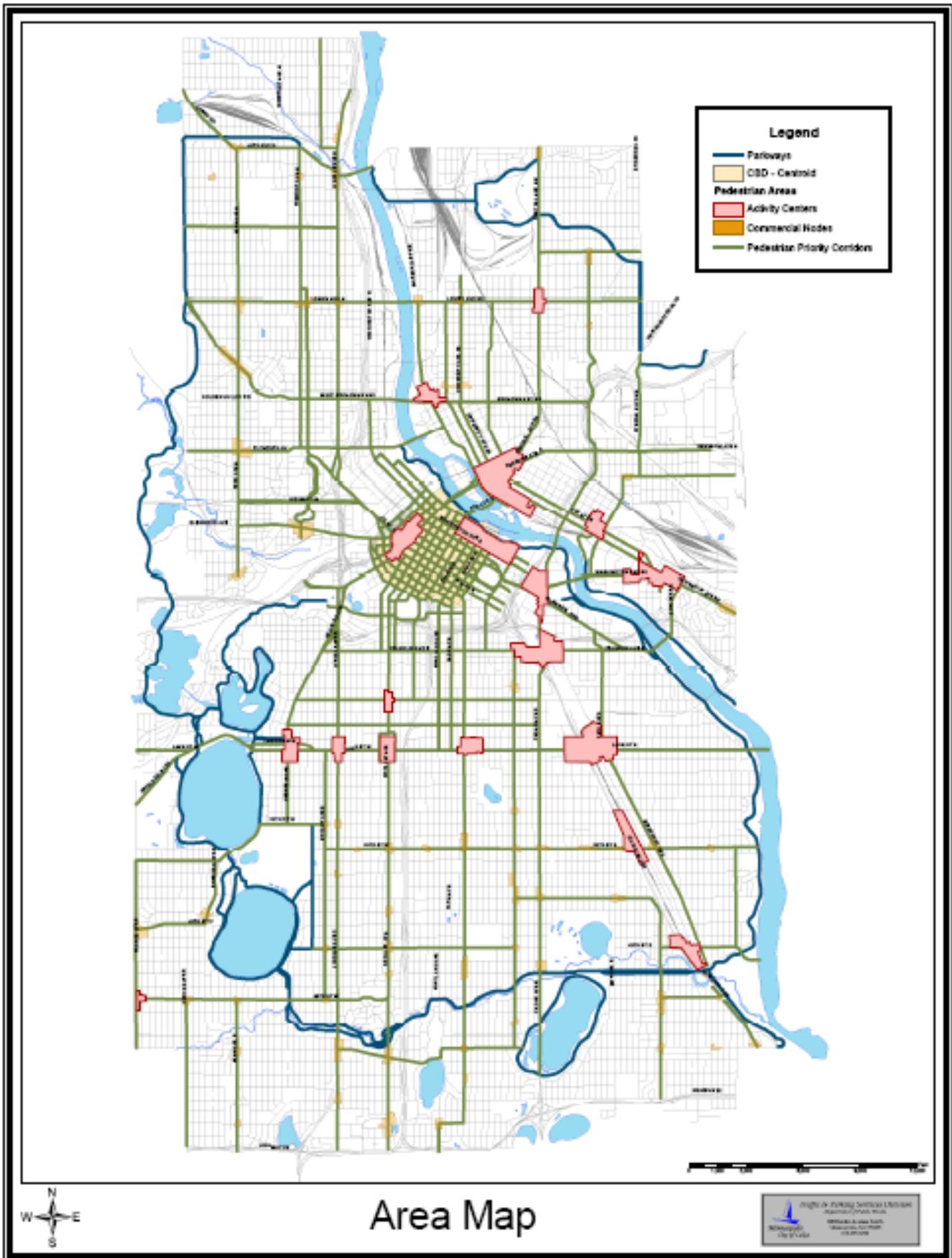
These areas are further defined in the Design Guidelines for Streets and Sidewalks.

Developments may cause land use to change over time resulting in the creation of Pedestrian areas that are not included on the original area map. The process for changing the Street Lighting Plan designation of a Residential area to a Pedestrian area is as follows:

1. The process is initiated by block, business, or neighborhood organization.
The minimum size of a Pedestrian area is a neighborhood commercial node.
2. The group provides a written request to Public Works- Traffic requesting the street lighting designation change and providing reason.
3. The request is shared with the council member for the area for initial feedback and comments.

The request is forwarded to the neighborhood and/or business association/group as appropriate for comments and support.

4. If the street meets the place type characteristics, as defined above, the request is considered for recommendation by Public Works to the City Council Transportation and Public Works committee for approval to change the area designation.
5. The street lighting area map is updated and changed appropriately.



SECTION 2

Street Lighting Standards

Standards for street lighting in Minneapolis fall into one of two broad categories: performance and materials/equipment. The standards will be regularly updated as technology advances. In order to more easily facilitate changing standards, the technical details will be included in a separate document from the Street Lighting Policy.

Performance

The performance standards for the City of Minneapolis follow the guidelines set by the Illuminating Engineers Society (IES). The current Minneapolis performance standards are based on the IES adopted RP-8-00 report. There are three criteria that lighting systems will be designed to: Foot Candle levels (amount of light), Uniformity (contrast between bright and dark spots), and Veiling Luminance (Glare). The performance standards for each area type are defined in the table below.

Criteria/Area	Central Business District-Centroid	Pedestrian Areas	Residential Areas
Foot Candles (amount of light)	1.5 to 2.0 fc	0.8 to 1.2 fc	0.3 to 0.6 fc
Uniformity (Contrast between bright and dark spots)	3 to 1 max	3 to 1 max	6 to 1 max
Veiling Luminance (Glare)	0.3 to 1 max	0.3 to 1 max	0.4 to 1 max

Lighting Above the City Performance Standard

Lighting will be installed to Minneapolis Standards for lighting levels. If additional lighting is desired and is reasonable for the area and the environment, then it may be approved. Environmental concerns and energy use are factors that will be considered to limit the amount of lighting over-standard. If lighting above the City Standards is installed then full cost (operation, maintenance, and installation) of that “extra” lighting will be charged to the adjacent properties. The installation charge is a one-time cost that may be paid over the term of the assessment. The operation and maintenance charges are annual charges.

Materials/Equipment

Poles and Fixtures used for street lighting must be approved for use by the City of Minneapolis. Approval is based on operation, maintenance, and cost criteria. There are 4 styles of decorative fixtures that are currently approved, the lantern, acorn, teardrop, and shoebox. These fixtures are available in different levels of cut-off without changing the daytime aesthetics. There are currently four levels of light cutoff. In order of least to most they are: non-cutoff, semi-cutoff, cutoff, and full cutoff. Higher levels of cutoff perform better at higher mounting heights. The following table lists the fixtures in use in the City of Minneapolis, the current level of cutoff, the proposed level of cutoff and the required modifications to make the change.

A goal of the City of Minneapolis Street Lighting Policy is to have all fixtures be at least full cut-off. There are two fixtures, the acorn and lantern styles, that currently do not meet the full cut-off standard. To meet this goal, Public Works will specify full cut-off fixtures as part of any fixture procurement

process. If the vendors do not successfully bid full cut-off, Public Works will seek City Council approval for design exceptions or other fixture styles to this full cut-off fixture policy.

Fixture Style	Existing Cutoff Level	Proposed Cutoff Level	Comments
Shoebox	Semi-cutoff	Full cutoff	Change from drop lens to flat lens
Modern shoebox	Full cutoff	Full cutoff	
Teardrop	Cut-off	Full cutoff	Add a skirt (similar to the parkway light)
Lantern	Semi-cutoff	Full Cutoff	Fixture change out
Acorn	Non-cutoff	Full cutoff	Change globe
Cobra - Xcel wood pole	Semi-cutoff	Full cutoff	Fixture change out



Lantern



Acorn



Teardrop



Shoebox



“Modern Shoebox”



Parkway fixture

There are a number of light sources on the market. The City of Minneapolis currently uses high pressure sodium (HPS) in most lighting applications. This is due to cost and service life. Other options are metal halide (MH), induction, and Light Emitting Diode (LED) technology. The City will continuously research lighting technologies as these technologies become feasible. The City is currently procuring LED fixtures for the purpose of testing and will evaluate this fixture based on performance and price.

Centrally controlled, adaptive, and other smart lighting options are being explored. The City will be implementing a test in Downtown Minneapolis starting in 2009. These smart lighting systems provide communication links to the lighting system to proactively troubleshoot the system.

More detailed information is included in the Street Lighting Standards supplemental document.

SECTION 3

Process for the Installation of Street Lighting

This section will describe when different area types will receive, or be able to install, new lighting systems. This section will also include information on: the end of service life, lighting for developments, the two-phased petition process, and remaining approval process.

A. Pedestrian and CBD Areas

Pedestrian/CBD areas can receive lighting in two ways:

1. As part of a capital improvement street reconstruction project.
2. As a stand-alone street lighting project.

Capital Improvement Street Reconstruction Projects

New lighting systems will be installed with street reconstruction projects in Pedestrian and CBD areas and the cost will be assessed using the Uniform Street Lighting Assessment method, unless the area submits a petition to the city requesting that lighting not be installed. This will be done with the use of the Phase 2 petition mailing by the City. The required “opt-out” petition approval percentage is 70% for lighting to not be installed as part of a street reconstruction project in a Pedestrian or CBD area.

Stand-alone Street Lighting Project

Areas that are not likely to have the street reconstructed in the near future (within 5 years) are able to have street lighting installed by opt-in petition and paying an assessment for the cost of installation. Opting-in to a lighting project will follow a two-phase petition effort. Phase 1 will be used to document general support and shall equal or exceed 35% within a six month time period. If successful, then the Phase 2 petition is conducted via a formal petition mailing sent out by the City of Minneapolis. In order to move forward with a street lighting project, 70% of the affected owners/tax payers have to agree to support and fund the project using the Uniform Street Lighting Assessment. Other funds may be used to buy down the assessments such as grant dollars or neighborhood funds. The minimum project size to install street lighting is a neighborhood business node in Pedestrian areas; and one block, both sides of the street, in the CBD.

B. Residential Areas

Residential areas can receive lighting in two ways:

1. As part of a capital improvement street reconstruction project.
2. As a stand-alone street lighting project.

Capital Improvement Street Reconstruction Projects

New lighting systems will be installed with street reconstruction projects in Residential areas and the cost will be assessed using the Uniform Street Lighting Assessment method, unless the area submits a petition to the city requesting that lighting not be installed. This will be accomplished through the Phase 2 petition mailing by the City. The required “opt-out” petition approval percentage is 51% for lighting to not be installed as part of a street reconstruction project in a Residential area.

Stand-alone Street Lighting Project

Residential areas that are not likely to have the street reconstructed in the near future (within 5 years) are able to have street lighting installed by opt-in petition and paying an assessment for the cost of installation. Opting-in to a lighting project will follow a two-phase petition effort. Phase 1 will be used to document general support and shall equal or exceed 35% within a six month time period. If successful, then the Phase 2 petition is conducted via a formal petition mailing sent out from the City of Minneapolis. In order to move forward with a street lighting project, 70% of the affected owners have to agree to support and fund the project using the Uniform Street Lighting Assessment. Other funds may be used to buy down the assessments such as grant dollars or neighborhood funds. The minimum project size to install street lighting is 4 contiguous blocks, both sides of the street, in Residential areas.

C. End of Service Life

The lighting infrastructure that the City of Minneapolis installs is designed to last approximately 20 to 30 years. At some point, the cost to maintain the street lighting system becomes more than its present value and/or safety concerns have resulted in the infrastructure reaching the end of its usable service life. The end of service life will be determined by the City Engineer. The end of service life shall occur after all previous street lighting assessments, if any, are paid in full. When the end of service life is reached, there are options for how to proceed depending on the area type as described in the following sections.

Pedestrian and CBD Areas

When lighting infrastructure reaches the end of service life in a Pedestrian area or the Central Business District, the system will be replaced unless 70% opt out through the petition process. The cost for the new street lighting system will be assessed to the property owners. It is possible that some of the existing infrastructure may be used for the new installation, such as underground conduit and some foundations. The reuse of infrastructure components can reduce the cost of the replacement system. (Advancements in technology and changes in electrical standards may reduce the ability to reuse existing infrastructure.)

Residential Areas

There are two options for lighting systems that have reached the end of their service life in Residential areas. The affected properties will determine which option to choose. The selection of which option to use will follow a petition process similar to the one that is used for the initial installation. Opting-in to a replacement lighting project will follow a modified Phase 2 petition that is conducted via a formal petition mailing sent out from the City of Minneapolis. The modified petition will give property owners two choices, a) replace the lighting or b) revert back to the wood pole. In order to move forward with a street lighting project (non-wood pole), 70% of the affected owners have to agree to support and fund the project using the Uniform Street Lighting Assessment.

The cost for replacement of the lighting system or the removal/reverting back to the wood pole system will be assessed to the affected properties. Other funds may be used to buy down the assessments such as grant dollars or neighborhood funds.

D. Development Projects

The process for the installation of street lighting with development projects will vary by area type, size and disturbance to the boulevard and curb areas.

Developments that occur in Pedestrian Areas and the Central Business District and include the replacement of large segments of boulevard and curb, shall install street lighting at the same time as their development construction. A significant number of developments do this today. A complete lighting system (both sides of the street and designed to the City's lighting standards) should be installed if feasible. This is funded 100% by the development, unless other funds are contributed by grants, neighborhood, or other adjacent property owners.

Developments occurring in Residential areas are encouraged to install lighting at the time of their construction. A complete lighting system (both sides of the street and designed to the City's lighting standards) should be installed if feasible.

When properties are developed in the City of Minneapolis, they could be large or small in scale, they can also occur in the different street lighting area types (Residential, Pedestrian, or CBD). The location, size, and scope of work for the development are factors that can assist in the determination of whether or not to install street lighting as part of the project.

When projects are submitted to Minneapolis Development Review and/or Preliminary Design Review, this will be the time to determine the magnitude of disruption. The more extensive the disruption, the more feasible to install lighting, especially in Residential areas.

There is a cost savings to install street lighting at the same time that there is roadway and/or boulevard excavation. Most of the savings comes with the ability to place the underground conduit behind the curb and not needing to trench or directional bore it into place or replace sidewalks. There is also a savings due to exposing the utilities and restoring the boulevard is done only once. Likewise install lighting at a later date results in future disruption (boulevards or sidewalks) and construction impacts to the adjacent properties.

When projects are large in scale and cover multiple lots or are multi-million dollar projects, it is logical to install street lighting at the same time, the additional cost for lighting is relatively insignificant. When the development is just a renovation of an interior of a building and does not include work in the right-of-way, it is not the appropriate time to require the installation of street lighting. Developments that occur in Pedestrian and CBD areas should be strongly encouraged to install lighting, more so than developments occurring in Residential areas.

The timing of street reconstruction for the area is also a determining factor for whether to include street lighting with the development. If a street reconstruction project is scheduled to occur within 5 years, it makes sense to install lighting with the street project and not the development project.

The City of Minneapolis will own lighting systems that are located in the public right-of-way, and designed and installed to the City standards. To meet City standards, there must be only one lighting system. This means that the lighting installed as part of the development must result in the removal of the existing wooden pole or prior lighting system, if applicable. If the installation of a new lighting

system does not result in the removal of the existing lighting system, the charge for the operation and maintenance of these additional lights will be assessed, or charged, to the property owner/tax payer.

E. Gathering Petition Support

Gathering support for street lighting projects will occur two phases.

Phase 1

The first phase will be initiated by and consist of the neighborhood or business association, gathering general support by a petition. The neighborhood/block club/business association will work with city staff to determine project boundaries and select the hardware style and city staff will provide the current Uniform Street Lighting Assessment Rate. Then a dated Phase 1 petition form and designated for this area is provided by the City to the community to begin the petition process. When the general support equals or exceeds 35% within the six month time period, the information can be submitted to the City of Minneapolis Public Works which will review and validate the signatures and addresses according to current tax records.

Phase 2

Based on a successful Phase 1 petition, or when a street lighting system has reached the end of service life, a formal Phase 2 petition mailing will be prepared by the City of Minneapolis. The Phase 2 petition mailing ensures that all property owners are given the appropriate street lighting information, and the owners can make their decision whether to support the project based on this information. The mailing will be sent to the listed tax payers on record. The mailing will define the proposed project boundaries, estimated project cost, Uniform Street Lighting Assessment rate, information on the remainder of the process, and a form to complete and return to the City. The returnable form will provide the property address, a space to check “yes” or “no” on the support of the project, and a space for the owner/tax payer’s signature.

The City will tabulate results of the returned Phase 2 forms to determine the support level for the project. If the support reaches 70%, the proposed street lighting project will be forwarded to begin the Minneapolis City Council approval process. The petition is an advisory tool used to gauge the support for the street lighting project.

F. City Council Approval Process

When a street lighting project has received the 70% approval support from the property owners, the next steps will be to designate the project, set a public hearing, and receive direction to prepare assessments. The assessment procedure and public hearing process for street lighting is the same as other improvement projects as set out Chapter 10, Section 8 of the City’s Charter. Design and construction will begin only after the 30 day appeal process has passed. If there is an appeal, Public Works and City attorney staff will confer and determine whether to proceed with the project or return to City Council for further action.

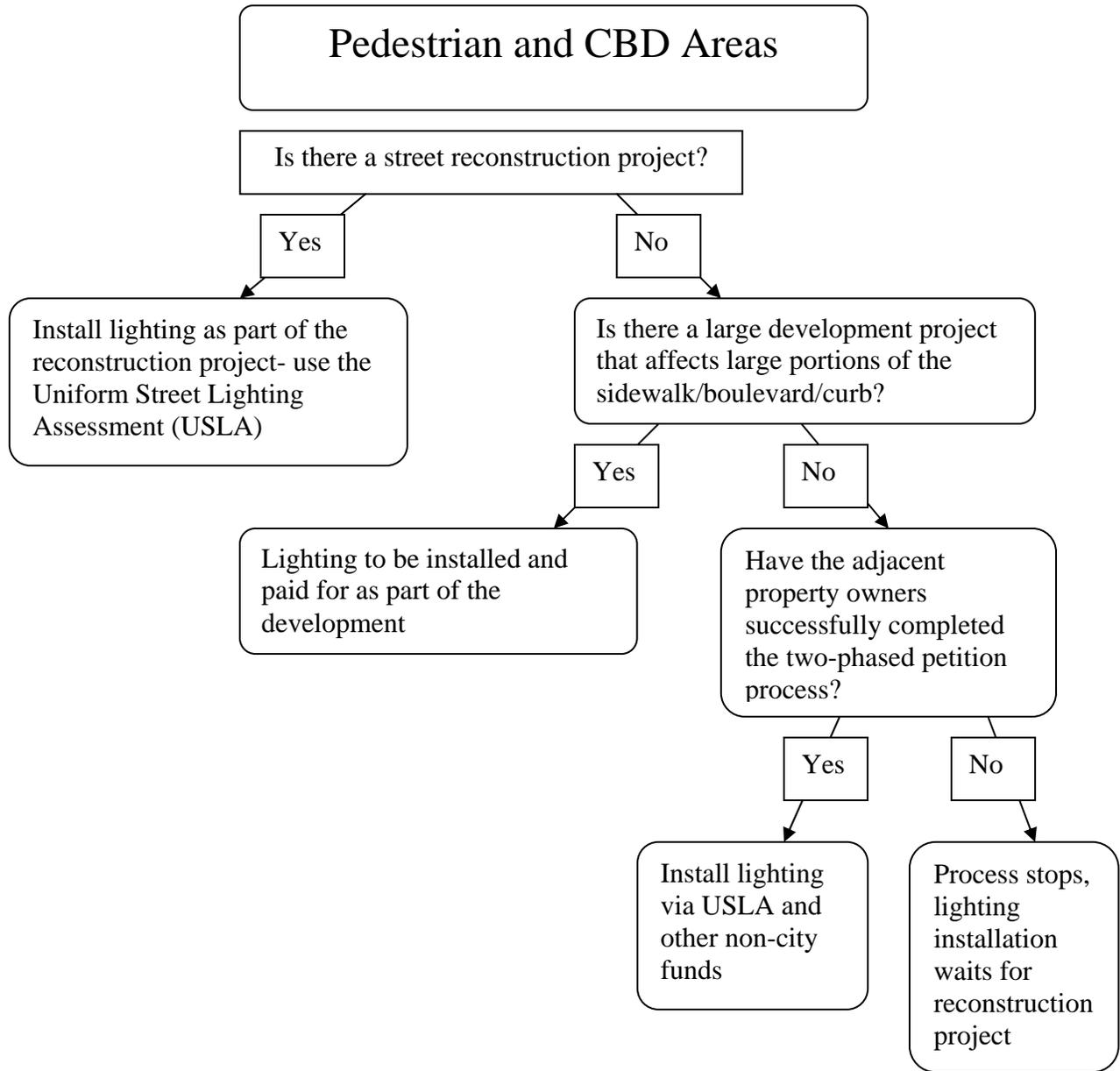
The following table shows a typical annual timeline for an opt-in street lighting.

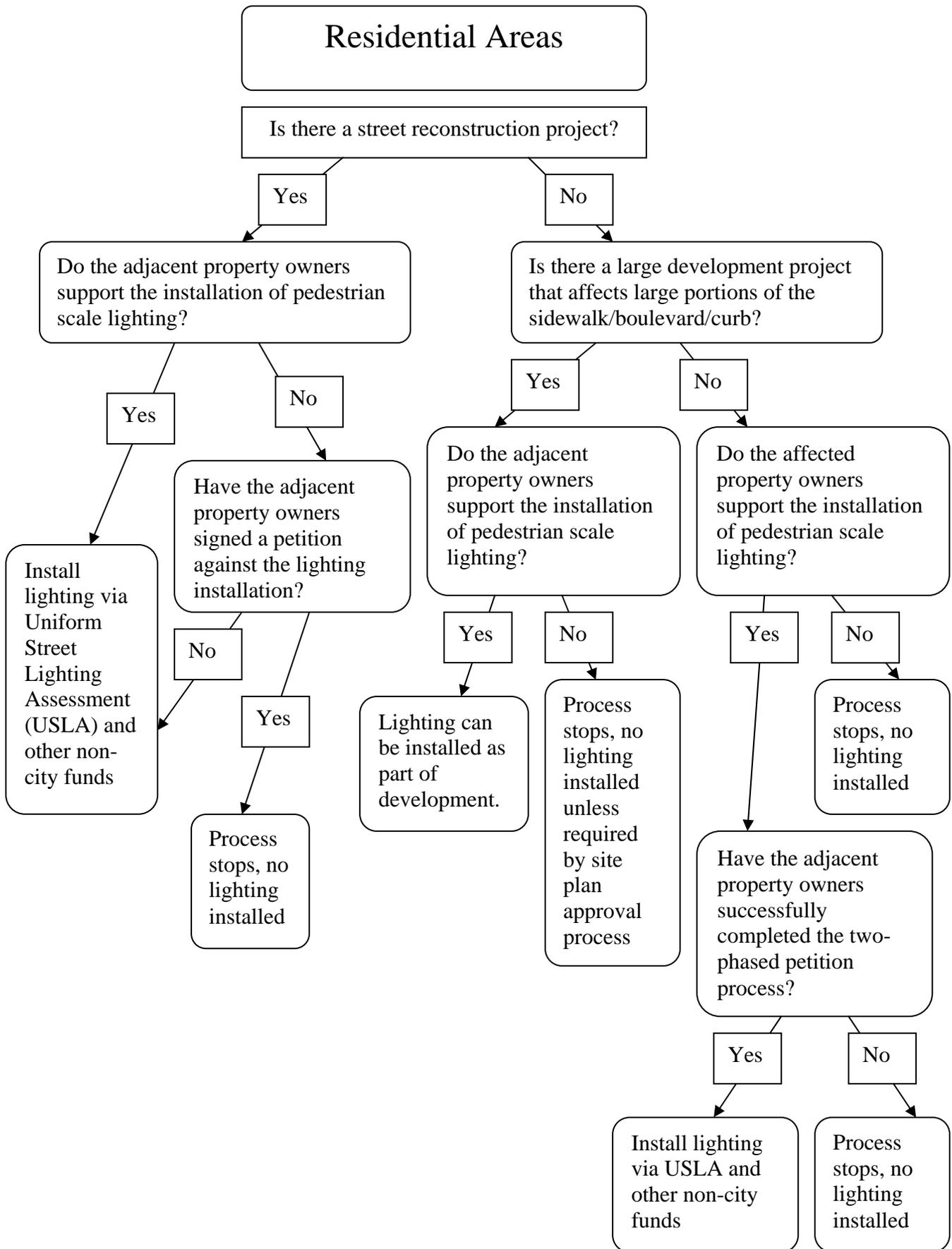
Timeline for Requesting Stand Alone Street Lighting Projects

Step	time needed	number of weeks	Starting Month
Community Requests to start process	0.25 month	1	on or before September year 0
Phase 1 Petition Process (neighborhood support) on-going- validate reached percentage	6 months maximum	24	October yr 0
Phase 2 Petition Process (city mailing)	2 to 3 months	12	April yr 1
Public Works reviews returned mailings- verify signatures and tabulates support	1 month	4	July yr 1
Council Member Update	0.25 month	1	August yr 1
Project Designation by City Council (time includes letter preparation and required time before the public hearing)	1.5 month	6	Mid-August yr 1
Public Hearing (TPW) and Project Approval	1 month	4	October yr 1
Appeal Process	1.5 month	6	November yr 1
Design Project	2 months	8	Mid-December yr 1
Bid project	1.5 months	6	Mid-February yr 2
Begin Construction			April yr 2

The timeline may be modified the first year, resulting in construction starting later, mid summer versus April.

The following charts show the decision making process for the installation of street lighting in Pedestrian, CBD, and Residential areas.





SECTION 4

Funding Street Lighting

The funding for street lighting projects varies based on the process used to install the lighting. The installation of street lighting is either associated with a 1) street reconstruction project, or 2) a stand-alone street lighting project that was initiated by the citizens, neighborhood and/or business association.

Street Lighting with Street Reconstruction Projects

Street lighting will be installed as part of a street reconstruction project, unless 70% of the property owners in the Pedestrian areas and the Central Business District, or 51% of the property owners in Residential areas, opt-out through a petition process. The cost for street lighting will be paid by the Uniform Street Lighting Assessment (USLA) charged to all assessable property owners within the project area.

Street Lighting Stand Alone Projects

Street lighting can be installed in advance of a street reconstruction project in Pedestrian, CBD, and Residential Areas. These projects will occur when 70% of the property owners opt-in through a petition process. The capital cost for these installations will be paid by a Uniform Street Lighting Assessment (USLA) charged to the assessable properties adjacent to the project.

Neighborhoods, grants, or other funds can also be used to fund the installation of street lighting. Such funds can be used to “buy down” the assessments. If funding other than assessments are greater than the total street lighting project cost, an assessment would not be necessary.

The Uniform Street Lighting Assessment rate will differ due to installation costs of such systems between area types (Residential versus, Pedestrian or CBD) and will be set annually for all such projects. The Residential rate is expected to be less than the Pedestrian/CBD rate due to the reduced costs of boulevard (sidewalk) replacement. The USLA rate paid over a period up to 20 years. The cost of a lighting project includes preliminary engineering, administration, design, installation, inspection, and final closeout.

Operation and Maintenance Costs

Street lighting that has been installed in the public street right-of-way and to city standards (lighting levels and equipment used) will be owned by the City. The operation and maintenance costs for city owned lighting will be paid out of the City’s general fund.

See section 2 for lighting costs above the city standard.