



AGENDA
PLANNING AND ZONING COMMISSION MEETING
CITY OF CREVE COEUR, MISSOURI
MONDAY, OCTOBER 3, 2022
6:00 PM

Pursuant to Section 610.022 RSMO, the Planning and Zoning Commission could, at any time during the meeting, vote to close the public meeting and move to closed session to discuss matters relating to litigation, legal actions and/or communications from the City Attorney as provided under Section 610.021(1) RSMo. and/or personnel matters under Section 610.021(13) RSMo. and/or employee matters under Section 610.021(3) RSMo. and/or real estate matters under Section 610.021(2) or other matters as permitted by Chapter 610.

Reports, documents, plans, and related materials are available for examination at the Creve Coeur Government Center, 300 North New Ballas Road, prior to the meeting.

Special disabled service may be arranged by contacting the Office of the City Administrator in advance.

CALL TO ORDER

ROLL CALL

Ms. Julie LaBonte (Chair)
Ms. Muriel Hall
Mr. Larry Potashnick
Mr. AJ Wang
Ms. Rhonda O'Brien
Mr. Thomas Buelter
Ms. Marjorie Richter

Mr. Carl Lumley, City Attorney
Mr. Jason Jaggi, Director of Community Development
Ms. Bethany L. Moore, City Planner
Ms. Megan Waller, Administrative Supervisor/Recording Secretary

ACCEPTANCE OF THE AGENDA

APPROVAL OF MINUTES

- 1. September 6, 2022 Planning and Zoning Commission Draft Minutes**

PUBLIC COMMENT

An opportunity for members of the public to address the Planning and Zoning Commission regarding issues or concerns not already on the agenda for this meeting. Those wishing to speak will be asked to limit comments to three minutes and to complete a speaker card.

UNFINISHED BUSINESS

(None)

NEW BUSINESS

1. Application #22-025: Text Amendment to Modify the Home Occupations Regulations for Permitted Uses in Compliance with Changes to State Law According to House Bill 1662

Jason Jaggi, Director of Community Development, on behalf of the City of Creve Coeur, has submitted an application for text amendments to Section 405.450.A of the Zoning Ordinance which regulates home occupations. Recent changes in state law set forth in House Bill 1662 (2022) require updates to the City's zoning regulations for home-based businesses. The amendment allows for less regulation of home-based businesses while retaining requirements meant to preserve residential appearance, prevent adverse impacts on the character of the surrounding neighborhood, and protect public health and safety.

2. Application #22-028: Text Amendment to Create Residential Tree Requirements for Single-Family Lots and to Modify the Tree Requirements for Subdivisions

Jason Jaggi, Director of Community Development, on behalf of the City of Creve Coeur, has submitted an application for a text amendment to create a new Section 405.560 *Residential Tree Protection and Replacement Requirements* and associated amendments to Sections 410.320 *Tree Conservation*, Section 405.120 *Definition of Terms* and Section 410.590 *Definitions*. The text amendment would provide tree protection and replacement requirements for existing single-family lots with construction activities that involve a new home or any increase in impervious area of fifty percent or more, including additions, on an existing residential lot which is subject to a demolition permit, building permit, residential development permit, or land disturbance/ site improvement permit. The existing tree conservation section for subdivisions would be amended to allow for less removal of existing trees.

WORK AGENDA

1. EV Charging Station Requirements Work Session

A work session to discuss the regulation of EV charging stations.

DEPARTMENT REPORTS

Jason Jaggi, Director of Community Development

ADJOURNMENT

Posted: _____

Jason W. Jaggi
Director of Community Development



DRAFT MINUTES
PLANNING AND ZONING COMMISSION MEETING
CITY OF CREVE COEUR, MISSOURI
TUESDAY, SEPTEMBER 6, 2022
6:00 PM

CALL TO ORDER

ROLL CALL

The meeting was called to order at 6:00 PM.

AJ Wang	Vice Chair/Commission Member	
Rhonda O'Brien	Commission Member	(Absent)
Marjorie Richter	Commission Member	
Julie LaBonte	Chair/Commission Member	
Thomas Buelter	Commission Member	
Muriel Hall	Commission Member	
Larry Potashnick	Commission Member	(Absent)

The following staff were also present:

Carl Lumley, City Attorney
 Jason Jaggi, Director of Community Development
 Bethany Moore, City Planner
 Megan Waller, Administrative Services Supervisor/ Recording Secretary

ACCEPTANCE OF THE AGENDA

Mr. Buelter made a motion to approve the agenda. Ms. Richter seconded. All in favor.

APPROVAL OF MINUTES

1. August 15, 2022 Planning and Zoning Commission Meeting Minutes

Ms. Richter made a motion to approve the August 15th, 2022 meeting minutes. Mr. Buelter seconded. All in favor.

PUBLIC COMMENT

None

UNFINISHED BUSINESS

Attachment: Draft Minutes 9.6.22 (September 6Th, 2022 PZ Minutes)

1. PUBLIC HEARING. #22-020: Application to Planning and Zoning Commission #22-019 and #22-020: Application for a Conditional Use Permit and Site Development Plan with Associated Boundary Adjustment for First Bank Located at 11901 Olive Boulevard

Those speaking to the request were sworn in.

Mr. Wang arrived at 6:03 PM.

Mr. Tyler Myer, Lamar Johnson Collaborative, presented photo renderings of the proposed building, parking garage, and landscaping. He presented a rendering of the proposed courtyard view from Olive Blvd.

Mr. Myer stated that he has worked with staff to create landscaping of the courtyard that utilizes different heights of plants for privacy from the inside but also allows visibility from the street.

Mr. Myer stated that a new bus stop bench has been added to the project.

Mr. Myer stated that he has worked with staff to find a better location for the trash enclosure. He explained that the applicant and staff believe that the proposed location will be the best fit for all needs. He also stated that the same building materials will be used for the enclosure with heavy landscaping.

Mr. Myer stated that the initial plan proposed two site signs. He explained that the new plan proposes one site sign on the west with landscape features at each corner of the site on Olive.

Mr. Myer stated that the angle of the entry drive has been widened to allow more space between Olive Blvd and the entryway.

Mr. Buelter asked for clarification of what is screened on top of the building. Mr. Myer stated that this is HVAC screening around the rooftop mechanical units.

Mr. Buelter asked the level of LEED certification. Mr. Myer stated that currently the building is LEED silver and may become LEED gold based on cost.

Mr. Wang asked if electric vehicle charging stations will be included in the project. Mr. Myer stated that they are planned for the parking garage with extra conduit run to allow for more in the future.

Mr. Wang asked if there will be a bus shelter. Mr. Myer stated that it will be a bus stop bench, not a shelter.

Ms. Hall had concerns with the location of the trash enclosure and parking garage due to the nearby condominiums. Mr. Myer stated that these will be heavily landscaped and will be designed to blend with the building.

Ms. Hall asked if the east side of the building is the only feasible location for the trash enclosure. Mr. Myer stated that it is the best option to meet all requirements. He explained that this location is the least public and has the largest green space setback.

Mr. Myer reminded the commission that the parking garage is one story. He explained that the proposed garage will look like a surface parking lot from Olive once built.

Ms. Bethany Moore, City Planner, reminded the commission that staff had five areas of concern after the last meeting. She explained that staff has asked for direct pedestrian access from Olive Blvd, alternate locations of the trash enclosure, transparency of the courtyard from Olive Blvd, incorporation of a bus shelter, and a landscaped feature on the corners of the site.

Ms. Moore stated that the applicant has complied with staff requests for pedestrian access along Olive Blvd.

Ms. Moore stated that staff does typically ask that trash enclosures are not on street fronts. She explained that this site does have three street fronts, and the applicant has incorporated extra landscape screening of the proposed trash enclosure. She stated that staff is pleased with the proposed landscape screening and materials.

Ms. Moore stated that the applicant has changed the landscape plan to allow transparency into the courtyard and staff is pleased with the proposed changes.

Ms. Moore stated that the applicant will be working with staff and the department of transportation on the incorporation of the bus bench and its location. She also stated that most of the existing sidewalk will be replaced with 6-foot-wide sidewalk.

Ms. Moore stated that the applicant has changed the proposed landscape plan to show a sign located at one corner with landscape features at the other corner on the site. She explained that the applicant is working with staff to finalize the details of the landscape features.

Ms. Moore presented the proposed landscape plan and stated that additional landscaping has been added to screen the view from the adjacent residential buildings of the trash enclosure and parking garage. She stated that staff is pleased with the landscape changes.

Ms. Moore stated that the proposed lighting plan appears to meet all requirements. She stated that staff has asked for a complete photometric plan to ensure that there will be no light spillage onto neighboring properties as a condition of approval.

Ms. Moore stated that a traffic impact study has been conducted, but Missouri Department of Transportation approval has not yet been given.

Ms. Hall asked if the garage will be open to the public after hours. Mr. Myer stated that the lower deck of the garage will be closed after hours, and the upper deck will be open with cameras and lighting for security.

Mr. Jason Jaggi, Director of Community Development, stated that staff did work with the applicant on alternative locations for the trash enclosure and delivery station. He explained that staff has found that is the best location for the layout of the site. He also explained that given the proposed landscape plan, impacts should be as minimal as possible.

No one from the public asked to speak.

Mr. Carl Lumley, City Attorney, offered the exhibits to the record and the hearing was closed.

Mr. Wang made a motion to approve the proposed boundary adjustment subject to the condition that a final drawing will be prepared for signature and recording. Ms. Richter seconded. All in Favor.

Mr. Wang made a motion to recommend approval of the conditional use permit with associated site development plan for First Bank subject to the conditions outlined in the staff report and draft ordinance. Ms. Richter seconded. All in Favor.

RESULT:	APPROVED [UNANIMOUS]
MOVER:	AJ Wang, Vice Chair/Commission Member
SECONDER:	Marjorie Richter, Commission Member
AYES:	Wang, Richter, LaBonte, Buelter, Hall
ABSENT:	O'Brien, Potashnick

NEW BUSINESS

1. PUBLIC HEARING. Application #22-021: Conditional Use Permit for Lou Fusz Subaru Service Facility Located at 1000 North Lindbergh Boulevard

Those speaking to the request were sworn in.

Mr. Steve Hollander, Hollander Architects, represented Lou Fusz Subaru and stated that the proposed facility will allow six service bays and one diagnostic machine.

Mr. Hollander stated that proposed updates to the building include black aluminum framing, tinted glass, overhead garage doors on the north and south sides of the building to match the existing Lou Fusz Subaru building next door.

Mr. Hollander stated that the south door will be recessed and should not be visible when traveling on Lindbergh.

Mr. Hollander stated that a six-foot sidewalk will be added along Old Olive.

Mr. Hollander stated that the Missouri Department of Transportation is in the process of providing new sidewalks along Lindbergh, and the appropriate easements have been granted.

Mr. Hollander stated that a connector sidewalk will be added from the new sidewalk to the building. He explained that staff has asked that this be a 6ft sidewalk as well.

Mr. Hollander stated that the applicant would like to remove the current trash enclosure if allowable.

Mr. Hollander stated that the stucco will be painted to match the existing Subaru facility.

Mr. Hollander stated that new street trees and shrubbery will be added along Lindbergh Blvd, Olive Blvd, and the parking lot as well as drought resistant plantings to meet the 39N Plan requirements. He stated that the applicant would like to remove the requirement of irrigation, as native plantings are planned.

Mr. Hollander stated that nonconforming light fixtures will be removed and replaced on the site.

Mr. Hollander stated that rights to the sign are shared with the adjacent business, the Ivy Motel, and cannot be removed.

Mr. Jason Jaggi, Director of Community Development, stated that this request is to amend the conditional use permit to allow for an expansion of the existing Lou Fusz Subaru facility. Mr. Jaggi stated that the proposed number of service bays do meet the City ordinance.

Mr. Jaggi stated that currently there is almost no landscaping on the site and the proposed landscaping will be a vast improvement.

Mr. Jaggi stated that the project is subject to the 39 North master plan and easements are requested by the public works department to meet requirements of the 39 North master plan including an easement to allow for a 39 North sign in the future.

Mr. Jaggi stated that the site is required to be one acre minimum and must remain one acre minimum in the future.

Mr. Jaggi stated that staff does not recommend removing the trash enclosure requirement, and per City ordinance, a trash enclosure must be solid brick or concrete.

Mr. Jaggi stated that the current ordinance does require irrigation of landscaping, and staff does not recommend removing the irrigation requirement.

Mr. Jaggi confirmed that the current sign shared with the Ivy Motel is non-conforming, but it is grandfathered in. He stated that staff is working to determine changes that can be made to the existing sign.

Mr. Lumley asked if the scope of the sign could be reduced by removing the top sign if the applicant does not plan to fill the space. Mr. Hollander stated that his client has no intent to advertise with this sign.

Mr. Jaggi stated that there is a condition that Lou Fusz will provide easements to be determined to allow for future roadway improvement plans.

Mr. Jaggi stated that conditions of approval include the service facility remaining a component of the Subaru dealership, the landscape plan must be revised to include underground irrigation, proposed public easements are to be provided and reviewed by the city attorney and recorded prior to the issuance of any permits, and if possible, the current sign should be removed. Mr. Jaggi added that if the sign cannot be removed, it must be re-painted.

Mr. Buelter asked if the parking lot will be cleaned up. Mr. Jaggi stated that it will be re-stripped.

Mr. Buelter asked if there will be handicap spots since the intent is not for public use. Mr. Jaggi stated that there will be two handicap accessible spaces, which are required regardless of intent, and presented the proposed location.

Ms. LaBonte asked if irrigation is required for native plantings. Mr. Jaggi stated that the City encourages native plants but clarified that the code does not excuse irrigation for native plants. He stated that the commission does have some discretion to adjust this condition.

Ms. LaBonte asked if there are alternative solutions for the sign if the top cannot be removed. Mr. Jaggi stated that the condition could be adjusted to require the top portion to be filled if the size cannot be reduced. Mr. Lumley stated that this can be reviewed at the council meeting once the easement has been reviewed.

No one from the public asked to speak.

Mr. Lumley offered the exhibits to the record and the hearing was closed.

Mr. Wang made a motion to recommend approval of an amendment to the existing conditional use permit for Lou Fusz Subaru to allow for the service facility located at 1000 N Lindbergh Blvd as presented and according to the draft ordinance presented in the staff report. Ms. Richter seconded. All in Favor.

RESULT:	APPROVED [UNANIMOUS]
MOVER:	AJ Wang, Vice Chair/Commission Member
SECONDER:	Marjorie Richter, Commission Member
AYES:	Wang, Richter, LaBonte, Buelter, Hall
ABSENT:	O'Brien, Potashnick

2. PUBLIC HEARING: #22-022: an Application for an Amendment to the Mercy Hospital Master Sign Plan to Include the Mercy Hospital Ballas Campus Located at 701 South New Ballas Road

Those speaking to the request were sworn in.

Mr. Steve Barrens, Warren Sign Company, stated that proposed signs will be added to the master sign plan for the Mercy campus for the new addition to the campus on the south side of Conway.

Mr. Barrens stated that the proposed signs will have the same design as the signs on the existing Mercy campus. He explained that this is an expansion to cover the newly constructed building.

Mr. Barrens stated that the signs on the building are meant to be seen when traveling east and west on I-270.

Mr. Barrens stated that there are two large directional signs proposed, one from Conway Rd and one on Ballas. He also presented the interior campus directories and five small directionals.

Mr. Barrens stated that the pharmacy will have an illuminated sign.

Ms. Bethany Moore, City Planner, stated that this is an amendment to the existing master sign plan to extend to the new building.

Ms. Moore presented the site plan showing the proposed sign locations. She stated that most of the signs will be internal to the campus.

Ms. Moore stated that proposed signs match the signs on the existing campus.

Ms. Moore stated that there are three proposed signs on the facade and the zoning ordinance only allows one. She stated that given the size of the signs and the building, staff does not have concerns with this issue and a master sign plan allows for such flexibility.

Ms. Moore stated that the west elevation does not face a street but is meant to be seen from the highway. She explained that this is not typically allowed, but the applicant has asked for consideration of the proposed placement for visibility.

No one from the public asked to speak.

Mr. Lumley offered the exhibits to the record and the hearing was closed.

Mr. Buelter made a motion to recommend approval of the amendment to the master signage plan for the Mercy Hospital Campus subject to conditions contained in the draft ordinance. Mr. Wang Seconded. All in favor.

RESULT:	APPROVED [UNANIMOUS]
MOVER:	Thomas Buelter, Commission Member
SECONDER:	AJ Wang, Vice Chair/Commission Member
AYES:	Wang, Richter, LaBonte, Buelter, Hall
ABSENT:	O'Brien, Potashnick

3. Application #22-023: Preliminary Plat for the Subdivision of an 8.45 Acre Lot at 871 North Mason Road into Twelve Lots Within the D Single Family Residential Zoning District

Mr. Jim Brennan, McKelvey Homes, presented some history of McKelvey Homes, and the core values of the company. He also stated that the Duever family is in the audience.

Mr. Brennan stated the site is a total of 8.45 acres with 12 single family homes proposed. He stated that this complies with the D residential zoning requirements.

Mr. Brennan stated that common ground will be 48% of the proposed site.

Mr. Brennan stated that this will be a single sided street with creek protection on the south side of the street.

Mr. Brennan presented the models of the proposed development. He explained that the smallest home will be 2500 square feet with the largest being over 4000 square feet.

Mr. Brennan stated that on August 16th there was a meeting with the neighbors of the surrounding area to try to understand concerns. He explained that the largest concern seemed to be landscaping buffers. He stated that landscape architects will come up with a plan to try to supplement existing landscape as a buffer for the existing homes.

Ms. Bethany Moore stated that the preliminary plat application is to split one existing lot into twelve lots.

Ms. Moore stated that the proposed lots do meet the minimum size requirements of the D residential zoning district.

Ms. Moore stated that a variance will be needed for removal of the existing structures in the stream buffer.

Ms. Moore stated that there will be common ground with pedestrian access from Le Havre St to North Mason Rd. She explained that this is part of the City's plan to provide pedestrian access to Millennium Park. Ms. Moore stated that a condition to add an easement will be needed for this pedestrian access.

Ms. Moore stated that the proposed subdivision does include 5ft sidewalks throughout.

Ms. Moore stated that the public works department is satisfied with the stormwater mitigation measures at this time but will continue to examine concerns regarding the detention basin causing issues with existing homes to the south.

Ms. Moore stated that the tree conservation plan shows that there are 167 existing trees of 8 caliper inches or more. She stated that 42 trees, 25 percent, are proposed for removal.

Ms. Moore stated that the two conditions of approval are that the applicant must continue to work with the public works department to address storm water concerns as well as granting of a variance by the

Board of Adjustment. She added that an easement must be added for public access in the common ground.

Ms. LaBonte asked the flood score. Mr. Jaggi stated that this is in a regulated flood plain called the A zone. He explained that the SEMA engineer believes that the flood plain regulations may be able to be adjusted per the study. Mr. Jaggi stated that this property has not flooded during recent rain events.

Mr. Allister Pringle, 12721 Creekside View Dr, stated that he and neighbors to the south have concerns regarding storm water mitigation and flooding.

Mr. Pringle stated that neighbors are worried that the floodplain capacity will be diminished without adequate mitigation.

Mr. Pringle asked that the commission consider waiting until the stormwater concerns are addressed to recommend final approval.

Mr. Jim Duever, property owner, stated that the Duever family supports the proposed development, as none of the family members plan to build on the property and they are unable to continue caring for the property.

Mr. Steve Kling, Attorney, stated that he is representing the neighbors to the north of the subdivision at Mason Meadows subdivision.

Mr. Kling presented a photo to the commission and stated that the proposed lots about the backyards of the much larger lots to the North.

Mr. Kling referenced zoning code 410.110 and stated that the neighbors request that the lots have a common ground buffer or deeper lots between the two subdivisions.

Ms. Chris Bomze, 12736 Corum Way Dr, stated that there is a spring near her home, and she wonders how the stormwater mitigation will impact the spring. She also asked who will maintain the retaining wall.

Mr. Tim Meyer, engineer, stated that the SEMA has done a detailed study of the property. He explained that a flood plain study has been submitted to the City and to the Metropolitan Sewer District. He stated that they are not taking away from any floodplain on their side of the creek.

Mr. Meyer stated that if this study is approved by the City and MSD, it will have to be submitted to FEMA for approval.

Mr. Meyer stated that there is a detention basin to the north with an outfall structure that discharges with a flared end. He explained that the applicant plans to connect to the pipe with a manhole at the flared end to be piped through the proposed site. He also stated that the pipe will be underground.

Mr. Brennan stated that the Mason Meadow stormwater is currently being discharged onto their property.

Mr. Brennan stated that the retaining wall will be maintained by the homeowner's association. He stated that the City ordinance does not require a landscaping buffer. He also stated that this will nonetheless be addressed as a courtesy to the neighbors and that he would have landscaping architects design the buffer.

Ms. Teddy Godbee, 12712 Corum Way, had concerns with the setback on Mason Rd. She also had concerns with the impact of the development to the existing subdivision and need for adequate sidewalks.

Mr. John Bomze, 12736 Corum Way Dr, stated that the neighbors are looking for a buffer between Mason Meadows, and gave examples of other neighborhoods in the area. He explained that they hope for separation and privacy.

Mr. Wang made a motion to approve the Duever Estates subdivision preliminary plat subject to conditions outlined in the staff report. Mr. Buelter seconded.

Mr. Wang made a motion to add a condition to include a floodplain study and approval needs to be completed prior to subdivision improvements. He also made a motion to amend condition one to include a landscape plan subject to review and approval by the planning and zoning commission. Ms. Richter seconded. All in favor of the amendments.

RESULT:	APPROVED [UNANIMOUS]
MOVER:	AJ Wang, Vice Chair/Commission Member
SECONDER:	Thomas Buelter, Commission Member
AYES:	Wang, Richter, LaBonte, Buelter, Hall
ABSENT:	O'Brien, Potashnick

4. Malcolm Terrace Block 10 Alley Vacation

Mr. John Taylor, 332 Eugenia St, stated that he is the applicant for the vacation of the alley.

Mr. Taylor stated that eight of the nine homeowners have signed a petition for the vacation of the alley.

Mr. Taylor stated that he would need clarification on next steps if the vacation is approved.

Ms. Paula Miller, 332 Eugenia St, stated that they hope to be able to put a fence in their backyard to help contain their dogs.

Mr. Jason Jaggi, Community Development Director, stated that the City fully supports the vacation of this alley as it is not used.

Mr. Lumley clarified that it would need to be a condition of approval that the property owners protect the utility easements.

Mr. Taylor and Ms. Miller had concerns regarding the County parceling process.

Mr. Wang made a motion to recommend approval of the vacation of the portion of excess right of way, specifically the unimproved alley located between the properties on Eugenia St and South Mosley Rd south of Elzie St subject to the terms of the draft ordinance regarding establishing a utility easement within the same location as identified on the plat attached to the application. Mr. Buelter seconded. All in favor.

RESULT:	APPROVED [UNANIMOUS]
MOVER:	AJ Wang, Vice Chair/Commission Member
SECONDER:	Thomas Buelter, Commission Member
AYES:	Wang, Richter, LaBonte, Buelter, Hall
ABSENT:	O'Brien, Potashnick

WORK AGENDA

None

DEPARTMENT REPORTS

Mr. Jaggi stated that next meeting will be September 19th with two agenda items.

Ms. LaBonte stated that she will not be able to attend the September 19th meeting.

ADJOURNMENT

Mr. Wang made a motion to adjourn. The meeting adjourned at 8:33 PM.



city of CREVE COEUR

300 North New Ballas Road • Creve Coeur, Missouri 63141
 (314) 432-6000 • Fax (314) 872-2539
www.crevecoeurmo.gov

APPLICATION TO PLANNING AND ZONING COMMISSION #22-025: TEXT AMENDMENT TO MODIFY THE HOME OCCUPATIONS REGULATIONS FOR PERMITTED USES IN COMPLIANCE WITH CHANGES TO STATE LAW ACCORDING TO HOUSE BILL 1662

FOR THE MEETING OF: Monday, September 19, 2022, 6:00 P.M.

REQUEST: Jason Jaggi, Director of Community Development, on behalf of the City of Creve Coeur, has submitted an application for text amendments to Section 405.450.A of the Zoning Ordinance which regulates home occupations. Recent changes in state law set forth in House Bill 1662 (2022) require updates to the City's zoning regulations for home-based businesses. The amendment allows for less regulation of home-based businesses while retaining regulations meant to preserve residential appearance, prevent adverse impacts on the character of the surrounding neighborhood, and protect public health and safety.

ADDITIONAL INFORMATION: Text Amendments to the Zoning Ordinance require a public hearing and review by the Planning and Zoning Commission with final approval by the City Council.

APPLICANT: Jason Jaggi
 Director of Community
 Development
 300 N. New Ballas Road
 Creve Coeur, MO 63141

REPORT PREPARED BY: Bethany L. Moore, City Planner
DATE: September 13, 2022
ATTACHMENTS: Draft Ordinance

Key Issues:

- Are the changes consistent with the purposes of the Zoning Code?
- Are the changes consistent with the objectives and strategies of the Comprehensive Plan?

Zoning Code References

- Section 405.450.A.
Permitted Use. Home Occupations.

101st Missouri General Assembly

- House Bill No. 1662

BACKGROUND

Home Occupations regulations are enforced on a complaint basis as the City of Creve Coeur does not issue permits or conduct inspections for them. No changes to this practice are proposed with the amendment. The current regulations for Home Occupations were enacted in 1997 and have been modified several times since then with the most recent significant amendment in 2013.

AMENDMENT REQUEST

The submitted amendment is to revise the requirements for Home Occupations as state law has changed regarding the ability of local government to regulate home occupations with passage of House Bill Number 1662, 2022. The amendment would loosen the requirements on home-based businesses while retaining regulations meant to preserve residential appearance and prevent adverse neighborhood impacts. The home-based business would still have to be secondary to the residential use and the residential appearance would have to be maintained. The listed types of allowed home-occupations have been removed. The businesses are no longer limited to employing only family members residing on the premises and are instead limited to the occupancy limit for the residential dwelling unit for total number of employees and clients on site.

Please see attached Draft Ordinance for the specific revisions.

MOTION

If the Planning and Zoning Commission believes the proposed changes to the home occupations requirements are appropriate, the following would be a suitable motion for this application:

“I move to recommend approval of the text amendment to modify the Home Occupations requirements as regulated in Section 405.450.A of the Zoning Code as shown on the draft ordinance presented at the meeting on _____, 2022.”

APPENDIX 1: COMPREHENSIVE PLAN

Included and attached by reference. See body of report for specific excerpts.

APPENDIX 2: ZONING CODE

Included and attached by reference. See body of report for specific excerpts.

BILL NO. _____

ORDINANCE NO. _____

**AN ORDINANCE AMENDING SECTION 405.450.A OF THE ZONING ORDINANCE OF THE
CITY OF CREVE COEUR REGARDING HOME OCCUPATIONS**

WHEREAS, Section 405.450.A of the City Zoning Code establishes zoning regulations concerning home occupations; and

WHEREAS, state law has changed regarding the ability of local government to regulate home occupations (HB 1662, 2022) and the Director of Community Development has applied for approval of the necessary zoning ordinance changes, and

WHEREAS, the Planning and Zoning Commission of the City of Creve Coeur, Missouri has recognized the need for amendments to such regulations as set forth herein, to comply with state law; and

WHEREAS, the Planning and Zoning Commission of the City of Creve Coeur, Missouri, held a public hearing thereon at the Creve Coeur Government Center on Monday, _____, 2022, beginning at 6:00 p.m., or immediately following the close of the previous public hearing; and

WHEREAS, the Planning and Zoning Commission reviewed and, by a vote of _____, recommended approval of the subject amendments as set forth herein at its meeting on Monday, _____, 2022; and

WHEREAS, notice of said public hearing had previously been published at least 15 days prior to the hearing in the St. Louis Countian, a newspaper of general circulation in the City of Creve Coeur and otherwise posted and published in accordance with the Zoning Ordinance; and

WHEREAS, all persons who presented themselves at said meeting and desiring to be heard were given an opportunity to be heard and a copy of the proposed ordinance has been made available for public inspection prior to its consideration by the City Council; and the Bill was read by title in open meeting two times before final passage by the City Council; and

WHEREAS, the City Council being fully informed finds that amending the City Code of Ordinances as set forth herein has been mandated by the State Legislature;

NOW, THEREFORE, be it ordained by the City Council of the City of Creve Coeur, Missouri, as follows:

SECTION 1: Section 405.450.A of the Zoning Ordinance, of the City of Creve Coeur's Code of Ordinances shall be amended as follows:

Home-Based Businesses Occupations.

1. Authorization. Any home-based business-occupation owned or operated by the owner or tenant of the residential dwelling unit that is "no-impact" pursuant to state law¹ including by being customarily incidental and secondary to the

¹ Sections 71.990 and 89.500 RSMo (HB 1662 2022).

BILL NO. _____

ORDINANCE NO. _____

principal use of ~~a the residential~~ dwelling unit shall be permitted in any such residential dwelling unit ~~subject to~~based on the provisions of paragraphs (2) and (3) of this Subsection 405.450(A).

2. Use limitations. All home ~~-based businesses-occupations~~ shall comply with the following provisions to preserve residential appearance, prevent adverse impacts on the character of the surrounding neighborhood, and protect public health and safety:

a. The total number of employees and clients on-site at one time shall not exceed the occupancy limit for the residential dwelling unit~~business shall not employ persons other than members of the family residing on the premises.~~

b. The activities of the business shall only occur inside the residential dwelling unit or in the yard, and shall not be visible from a street~~No more than twenty-five percent (25%) of the total combined enclosed floor area of a dwelling unit or any otherwise permissible accessory buildings, including finished or unfinished basement or attic spaces, may be used for such business.~~

c. The use of the residential dwelling unit for the home ~~-based business occupation~~ shall be clearly incidental and secondary~~subordinate~~ to its use for residential purposes by its occupants and shall under no circumstances change the residential character thereof.

d. No alterations~~s~~ to the exterior appearance of the ~~principal~~ residential building or premises shall be made which detracts from~~changes its residential character~~the nature of its appearance as a residence.

e. No mechanical equipment or process shall be used which creates noise, vibration, glare, fumes, odors, or electrical interference detectable ~~to the normal senses~~ outside the residential dwelling unit~~residence housing the home occupation.~~

f. There shall not be any~~No~~ exterior displays or signs other than a name plate as exempted in Section 405.930(E) of Article VIII.

Attachment: Draft Ordinance (Home Occupation Text Amendment)

BILL NO. _____

ORDINANCE NO. _____

~~g.~~ There shall be no goods, materials or commodities sold at retail or wholesale or displayed for sale at wholesale or retail from inventory on the premises.

~~gh.~~ There shall be no exterior storage of equipment or material used in connection with the home -based business-occupation.

~~hi.~~ ~~No t~~Traffic shall be generated by such home -based business-occupation in greater shall not exceed volumes than would normally be expected in thea residential areaneighborhood and any need for parking generated by the conduct of such home -based business-occupation shall be met by lawful off- ~~the-street~~ parking.

~~ij.~~ A home -based business-occupation shall be subject to all applicable laws and its activities shall be limited to the sale of lawful goods and services City occupational licenses and permits.

~~3.~~ *Permitted home occupations.* Customary home occupations include, but are not limited to, the following list of occupations. Others judged similar or identical thereto by the Zoning Administrator may be added to this list from time to time. Uses that are not similar or identical to any listed permitted home occupation, as determined by the Zoning Administrator, shall be considered prohibited. Each listed occupation shall, in any event, be subject to the limitations of the environmental performance standards provided in Section 405.550.

~~a.~~ Architects, engineers, lawyers, realtors, insurance agents, brokers and members of similar professions.

~~b.~~ Artists and sculptors.

~~c.~~ Authors and composers.

~~d.~~ Babysitting not more than four (4) children.

~~e.~~ Dressmakers, seamstresses and tailors.

~~f.~~ Data entry and similar computer work.

~~g.~~ Home crafts such as model making, rug weaving, lapidary work, cabinet making, etc., provided that no machinery or equipment be used or employed other than that which would customarily be found in the home shop, in connection with a hobby or a vocation not conducted for gain or profit.

~~h.~~ Music teachers, provided that instructions shall be limited to one (1) pupil at a time, except for occasional groups.

BILL NO. _____

ORDINANCE NO. _____

~~i. Office facility of a minister, rabbi, priest or other similar person associated with a religious organization.~~

~~j. Office facility of salesman, sales representative or manufacturer's representative, only when no retail or wholesale sales are made or transacted on the premises for goods, products or materials displayed, warehoused or stored on premises. Catalogue sales for goods, products or materials not inventoried, warehoused or stored on the premises are permissible.~~

~~k. Similar uses which do not involve retail or wholesale sales transactions on the premises, employment of persons other than occupants of the dwelling, any greater assembly, processing or fabrication operations. Such similar uses must be approved by the Zoning Administrator.~~

SECTION 2: This ordinance shall become effective in accordance with Section 3.11 (g) of the City Charter.

ADOPTED THIS ____ DAY OF _____, 2022.

JOSEPH MARTINICH
PRESIDENT OF CITY COUNCIL

APPROVED THIS ____ DAY OF _____, 2022.

DR. ROBERT HOFFMAN
MAYOR

ATTEST:

KELLIE HENKE
CITY CLERK

Attachment: Draft Ordinance (Home Occupation Text Amendment)



city of CREVE COEUR

300 North New Ballas Road • Creve Coeur, Missouri 63141
(314) 432-6000 • Fax (314) 872-2539 • Relay MO 1-800-735-2966
www.creve-coeur.org

APPLICATION TO PLANNING AND ZONING COMMISSION #22-028: TEXT AMENDMENT TO CREATE RESIDENTIAL TREE REQUIREMENTS FOR SINGLE-FAMILY LOTS AND TO MODIFY THE TREE REQUIREMENTS FOR SUBDIVISIONS

FOR THE MEETING OF: Monday, October 3, 2022, 6:00 P.M., Public
Hearing

LOCATION: A, B, C, and D Zoning Districts

REQUEST: Jason Jaggi, Director of Community Development, on behalf of the City of Creve Coeur, has submitted an application for a text amendment to create a new Section 405.560 *Residential Tree Protection and Replacement Requirements* and associated amendments to Sections 410.320 *Tree Conservation*, Section 405.120 *Definition of Terms* and Section 410.590 *Definitions*. The text amendment would provide tree protection and replacement requirements for existing single-family lots with construction activities that involve a new home or any increase in impervious area of fifty percent or more, including additions, on an existing residential lot which is subject to a demolition permit, building permit, residential development permit, or land disturbance/ site improvement permit. The existing tree conservation section for subdivisions would be amended to allow for less removal of existing trees.

ADDITIONAL INFORMATION: To establish a tree conservation and replacement ordinance for individual residential properties requires updating various sections of the City's codes. Text Amendments to the Zoning Ordinance require review by the Planning and Zoning Commission and final approval by the City Council.

APPLICANT: Jason W. Jaggi, AICP
Director of Community Development
City of Creve Coeur
300 N. New Ballas Road
Creve Coeur, MO 63141

REPORT PREPARED BY: Bethany L. Moore, City Planner

DATE: September 28, 2022

ATTACHMENTS: Existing tree conservation ordinance, Section 410.320.; December 6, 2021 City Council work session memo and draft; February 3 and March 7, 2022, P&Z Work Session memos and drafts, April 13 and May 11, 2022 HEB memos and drafts, HEB Letter of Support, DRAFT ordinance.

Key Issues:

- Are the changes consistent with the purposes of the Zoning Code?
- Are the changes consistent with the objectives and strategies of the Comprehensive Plan?

Creve Coeur 2030 References

- Chapter 3, Residential Neighborhood Recommendations
- Chapter 5, Implementation Matrix 2.6

Zoning Code References

- Section 405.120 *Definition of Terms*
- Section 410.320 *Tree Conservation*
- Section 410.590 *Definitions*

BACKGROUND

The current residential tree conservation ordinance was established in 1996 and received a minor amendment in 2007. The ordinance only applies to new subdivision plats and does not include existing single-family lots. There are currently no tree conservation requirements for existing single-family lots. The existing subdivision tree conservation ordinance allows for 75% removal of existing trees of 8-inch caliper or more with an additional 10% removal allowed during construction of the subdivision infrastructure if needed. Any trees removed without approval on the preliminary plat or approved by staff at the construction phase are required to be replaced on a 3:1 basis per tree removed.

The current ordinance is less robust compared to many surrounding municipalities that were reviewed when writing the proposed ordinance. Many municipalities nationwide require residential tree conservation and/or replacement of some kind in order to protect their existing natural resources and promote new and continued tree growth. Currently, residential developments on existing lots of record are able to remove all trees on a lot without restriction or penalty. Although street trees are currently required for new subdivisions, the proposed tree conservation requirements would be in addition to the existing street tree requirements.

On December 6, 2021, a Joint Work Session with the Planning and Zoning Commission and the City Council was held to identify planning priorities for staff in 2022. There was general agreement to review the current tree conservation ordinance to determine if changes need to be made. Following the December joint session, City staff held work sessions with the Planning and Zoning Commission on February 7, 2022 and March 7, 2022 to discuss possible revisions. In addition, on April 13th and May 11th, staff presented a summary of the revisions to the Horticulture, Ecology and Beautification (HEB) Committee for their review and input prior to the public hearing at the Planning and Zoning Commission. The chair of the HEB Committee provided a letter of support for the proposed ordinance. The staff memos and draft versions of the revisions associated with each of these meetings are attached for reference.

The proposed amendments seek to create a new Section 405.560 *Residential Tree Protection and Replacement Requirements* to require tree conservation and replacement on existing single-family lots of record with construction activities including a new home or any increase in impervious area of fifty percent (50%) or more. A Tree Protection and Replacement Plan (TPRP) is required to be submitted for review at the initial stage of the permitting process for the project. Fifty percent (50%) of all existing trees in fair or better condition measuring 6 inches or greater at DBH shall be retained. Any trees removed beyond the 50% are required to be replaced on a 1:1 basis or a 2:1 basis for trees more than 20 inches at DBH. This is in addition to the required street trees.

The existing Section 410.320 *Tree Conservation* is proposed to be amended to reflect the changes proposed in Section 405.560 as well as to change the allowed removal of 75% of existing trees over 8 inches DBH to 50% allowed removal of trees 6 inches DBH or greater and eliminate the additional 10% removal allowed during construction. The *Definitions* sections are also proposed to be altered to reflect the proposed changes and include the addition of a definition for Diameter at Breast Height (DBH). At this time, staff is proposing a formal draft ordinance for a recommendation to City Council.

COMPREHENSIVE PLAN REVIEW

The Creve Coeur 2030 Comprehensive Plan recommends the establishment of tree planting and coverage standards for private lots subject to redevelopment, common ground, and street trees in the redevelopment of single lots, multiple lots, and subdivisions. The plan also lists the creation of land development regulations to ensure new infill residential construction takes into account existing conditions to minimize the impacts of new construction and updates to the City's landscape guidelines to encourage the use of Missouri native plantings and discourage invasive species as short-term goals. Both of these short-term goals are promoted in the proposed amendment. The existing list of recommended trees includes several Missouri native species as well as invasive species that are not recommended. The proposed text amendments promote the desired character for residential lots outlined in the plan while promoting the

protection of existing natural resources in residential areas from inconsistent development with the surrounding area and visually attractive streetscapes.

PROPOSED AMENDMENTS TO THE ZONING CODE

The City regulates tree conservation within Section 410.320 of Chapter 410 Subdivision and Development of Land. This section only pertains to trees on lots proposed for new subdivisions and does not extend to existing single-family lots of record. Street trees are regulated under section and not subject to these amendments. The proposed tree requirements are in addition to the existing street tree requirements. Sections 405.120 and 410.590, both definition sections, are proposed to be amended to include the addition of the definition of Diameter at Breast Height (DBH), and to replace the size of the required trees to be included in the Tree Mass and Tree Census from 8 caliper inches to 6 inches DBH in order to account for a larger number of existing trees in the survey.

Section 410.320 for New Subdivisions

Existing Ordinance

The existing ordinance pertains only to lots being subdivided. A tree census is required to accompany every preliminary plat application and depict the location of trees and tree masses 8-inch caliper in size or greater. Existing trees depicted on the plan are allowed to be removed up to 75%. An additional 10% of trees are allowed to be removed beyond what was approved on the plan during construction if they are determined to interfere with construction. In the most extreme cases, the existing ordinance would allow for the removal of 85% of existing trees on a lot to be subdivided. Any trees removed beyond what was approved on tree conservation plan submitted with the preliminary plat must be replaced on a 3:1 basis by trees 3-inch caliper or greater and contained on the city's list of recommended trees maintained by the Public Work Department.

Proposed Revisions

The complete proposed draft ordinance is attached for review. The changes to the existing ordinance are as follows:

- Decreasing the percentage of trees allowed to be removed from 75% to 50% and eliminating the additional 10% removal allowance once construction has begun.
- The addition that the removal of hazardous, poor condition, dead, diseased or invasive species of trees do not count towards the 50% tree removal allowance.
- Replacing the 3:1 tree replacement requirement for trees removed beyond the allowed percentage with a 1:1 replacement requirement for trees 6 inches DBH or greater and 2:1 replacement for trees over 20 inches DBH. All trees must be a minimum of 2.5 caliper inches at time of planting instead of the previous 3 caliper inches.

New Section 405.560 for Existing Single Family Residential Lots

A new section titled *Residential Tree Protection and Replacement Requirements*, requiring tree conservation on existing single-family lots is proposed. The tree protection and replacement would be triggered by any construction activities that involve a new home or any increase in impervious area of fifty percent (50%) or more including additions. The requirements for the new section are as follows:

- The requirement for the submission of a Tree Protection and Replacement Plan (TPRP) completed by licensed professional to be submitted at the initial permitting stage for the project be that demolition permit, building permit, residential development permit or any other permit required to begin work on the site.
- 50% tree removal maximum allowed of all trees in fair or better condition measuring 6 inches DBH or greater.
- Trees removed beyond the 50% maximum must be replaced on a 1:1 basis for total trees removed unless the tree is 20 inches DBH or greater, in which case the trees must be replaced at a 2:1 basis.

- Fees in lieu of replacement due to documented site constraints to contribute to the Public Works Department street tree planting program.
- Documentation of all tree removal on site in the 1 year previous if known.
- Final report detailing compliance with the TPRP before escrow is released.
- Tree protection requirements depicted on TPRP.
- Appeal available through review by the Planning and Zoning Commission in the form of a minor site development plan.

The TPRP is required to be completed by a licensed landscape architect, architect, engineer, or International Society of Arboriculture (ISA) certified arborist. Although a licensed landscape architect or ISA certified arborist are preferred due to their greater knowledge of trees, architects and engineers cannot be excluded from completing the report due to state law.

If site constraints do not allow for the required amount of replacement trees to be provided, a payment in lieu of tree replacement can be made to the City's Forestry fund based upon the Public Works Departments cost per tree for labor and materials. The payment will be used to fund the planting of tree in other areas of city in order to achieve the overall goal of natural resource protection and promotion.

SUMMARY AND CONCLUSION

The proposed changes create greater protections for the city's natural resources through a new section to regulate tree conservation on single family lots and through strengthening the existing tree conservation section for new subdivisions. A draft ordinance has been prepared reflective of the changes discussed within this report to facilitate the Commission's review.

RECOMMENDATION AND ACTIONS

After deliberation and upon the closing of the public hearing, if the Planning and Zoning Commission has chosen to accept the regulations as provided in the draft ordinance as written, the following would be a suitable motion for this application:

"I move to recommend approval of the text amendments presented with Application #22-028 to create a new Section 405.560 titled *Residential Tree Protection and Replacement Requirements* and amending Section 410.320 *Tree Conservation* and Section 405.120 and 410.590 *Definition of Terms* subject to the conditions contained in the draft ordinance prepared for the meeting of October 3, 2022." (Conditions may be added, eliminated, or modified by preceding motion.)

APPENDIX 1: COMPREHENSIVE PLAN

Included and attached by reference. See body of report for specific excerpts.

APPENDIX 2: ZONING CODE

Included and attached by reference. See body of report for specific excerpts.

BILL NO. _____

ORDINANCE NO. _____

**AN ORDINANCE CREATING A NEW SECTION 405.560 TITLED RESIDENTIAL
TREE PROTECTION AND REPLACEMENT REQUIREMENTS AND AMENDING
SECTION 410.320 TREE CONSERVATION AND SECTIONS 405.120 AND 410.590
DEFINITION OF TERMS**

WHEREAS, an application was made by the Director of Community Development for the City of Creve Coeur to enact a new Section 405.560 to establish Residential Tree Protection and Replacement Requirements and to amend Section 405.120, Definitions, of the Creve Coeur Zoning Ordinance; and

WHEREAS, such legislation necessitates supporting amendments to Section 410.320 Tree Conservation and Section 410.590, Definition of Terms, in Chapter 410 Subdivision and Development of Land; and

WHEREAS, the Planning and Zoning Commission of the City of Creve Coeur, Missouri has recognized the need for such regulations in the City Code of Ordinances as set forth herein, to more effectively implement the goals of the Comprehensive Plan and the purposes of the Zoning Code; and

WHEREAS, the Planning and Zoning Commission of the City of Creve Coeur, Missouri, held a public hearing thereon at the Creve Coeur Government Center on Monday, October 3, 2022 and beginning at 6:00 p.m., or immediately following the close of the previous public hearing; and

WHEREAS, the Planning and Zoning Commission reviewed and, by a vote of ____ recommended approval of the subject amendments at its meeting on Monday, October 3, 2022; and

WHEREAS, notice of said public hearing had previously been published at least 15 days prior to the hearing in the St. Louis Countian, a newspaper of general circulation in the City of Creve Coeur and otherwise posted and published in accordance with the Zoning Ordinance; and

WHEREAS, all persons who presented themselves at said meeting and desiring to be heard were given an opportunity to be heard and a copy of the proposed ordinance has been made available for public inspection prior to its consideration by the City Council; and the Bill was read by title in open meeting two times before final passage by the City Council; and

WHEREAS, the City Council being fully informed finds that amending the City Code of Ordinances would be in harmony with and bear a substantial relation to the public welfare, health, safety, comfort, and convenience of the citizens of the City of Creve Coeur and in the public interest.

BILL NO. _____

ORDINANCE NO. _____

NOW, THEREFORE, be it ordained by the City Council of the City of Creve Coeur, Missouri, as follows:

SECTION 1: Section 405.560 of the Zoning Ordinance, of the City of Creve Coeur's Code of Ordinances is hereby enacted as follows:

SECTION 405.560 RESIDENTIAL TREE PROTECTION AND REPLACEMENT REQUIREMENTS

- A. *Purpose And Intent.*** It is the purpose and intent of this Section to require adequate protection of natural resources and property values in the City, and to maintain and advance the goals of the Comprehensive Plan, by providing for regulations regarding protection, removal, and the planting of trees on residential lots within the City's residential zoning districts. Nothing in this Section is intended to preclude the removal of existing trees on private property after the receipt of an initial occupancy permit except in connection with any future construction.
- B. *Applicability.*** The provisions of this Section shall apply to lots of record that contain a permitted use as a single-family residence with construction activities that involve a new home or any increase in impervious area of fifty percent (50%) or more, including additions, and which are subject to a demolition permit, building permit, residential development permit, and/or land disturbance/site improvement permit. Lot subdivisions are governed by the provisions of Chapter 410.
- C. *Tree Protection and Replacement Plan Submittal Requirements.*** A Tree Protection and Replacement Plan (TPRP) shall be submitted for review as part of the initial permit process, be it demolition permit, building permit, residential development permit, or other required permit application. The TPRP shall be completed by a licensed landscape architect, architect, engineer, or International Society of Arboriculture (ISA) certified arborist and include the following minimum information:
 - 1. Project title listing the project name, owner name, and name and credentials of individual or firm preparing the plan.
 - 2. North arrow, graphic and written scale which shall be based on the site plan showing existing and proposed grades, utility easements, new utility lines, and location of all existing and proposed improvements
 - 3. A survey of all existing trees 6-inch diameter at breast height (DBH) or greater on the property, indicating their type (botanical and common name), diameter size in inches, and whether to be removed or to remain.
 - 4. Location of all trees removed in the 12 months prior to the date of application, if known.

BILL NO. _____

ORDINANCE NO. _____

5. Graphic depiction showing the location and type of tree protection fencing and showing City of Creve Coeur Tree Protection Details and Standards.
6. Location of new trees graphically shown and keyed to a tree chart providing size (DBH), species and quantity.
7. Street Trees as defined by Section 410.300 should be specifically marked as such separately from other trees on survey.

D. *Tree Removal and Replacement Requirements*

1. Fifty (50 percent) of all existing trees in fair or better condition measuring 6-inches or greater at DBH should be retained on the lot, if feasible.
2. Trees removed beyond the 50 percent lot retention minimum that have 6-inches or more at DBH shall be replaced on a one-to-one ratio (1:1) based on the total number of trees removed. Trees that are more than 20-inches at DBH shall be replaced on the basis of a two-to-one ratio (2:1).
3. If the replacement trees as required by this Section cannot be provided on-site, due to site constraints creating a hardship documented on the TPRP and confirmed by the Zoning Administrator, a payment in lieu of tree replacement shall be made to the credit of the City's Forestry account in the General Revenue Fund. This fee shall be based upon the City's current year street tree planting cost per tree for labor and materials determined by the Public Works Department.
4. All replacement trees shall be a minimum of two-and-a-half (2.5) caliper inches in size at time of planting and shall be selected from the City of Creve Coeur's recommended tree list. Replacement trees shall be selected from a comparable category based on mature tree height of the tree removed to the maximum extent practicable.
5. Trees removed within one (1) year preceding the submittal of a permit application to the City must be documented by a dated conditions report, dated conditions photographs, and a copy of the work order with date of service submitted with the TPRP. Such trees shall be considered as removed in connection with the project and included in the calculations required under this section. Any tree removed within one (1) year prior to the submittal of a permit application that is not documented and approved by the City will be considered in fair or better condition by default.
6. The removal of any trees that are hazardous, in poor condition, dead, diseased, or considered invasive by the Missouri Department of Conservation on private property, as determined by the TPRP, or other evidence as deemed credible by the City, is not subject to the requirements of this Section.
7. The installation of all required trees shall be completed prior to the issuance of a final occupancy permit. Any trees that are removed at time of final inspection contrary to the approved TPRP shall be replaced in accordance with the requirements of this Section.

BILL NO. _____

ORDINANCE NO. _____

8. Street Trees shall be maintained or provided in order to meet one (1) tree per thirty (30) feet of street frontage and do not count toward the replacement of removed trees on private property.
9. A Final Report regarding compliance with the TPRP shall be prepared by the same person or entity who developed the TPRP before the final inspection is completed and the escrow is released. If such person or entity is not available, the Zoning Administrator may approve a substitute.

E. Tree Protection Requirements

1. All tree protection measures depicted on the TPRP shall be installed prior to the commencement of demolition, excavation, construction, or site work and maintained throughout construction activities.
2. Tree protection fencing shall be installed around the dripline of each impacted tree or cluster of trees within disturbed areas.
3. City of Creve Coeur Tree Protection Details and Standards shall be provided on the plan and followed at all times.

F. Appeal Procedures. An applicant may appeal the enforcement of this section by the Zoning Administrator through review by the Planning and Zoning Commission in the form of a minor site development plan.

SECTION 2: Section 410.320. Tree Conservation is hereby amended to read as follows:

SECTION 410.320. TREE CONSERVATION

- A.** Any subdivision preliminary plat shall provide for the conservation of existing trees on the site. Nothing in this Section is intended to preclude the removal of existing trees on private property after the receipt of an initial occupancy permit except in connection with any future construction (see Section 405.560).
1. A tree census shall accompany every preliminary plat application. The tree census shall graphically depict the general location of all tree masses and all trees of ~~eight (8)~~ six (6) inch ~~caliper-size~~ diameter at breast height or larger. In addition, such census shall indicate which tree masses and trees are to remain and which tree masses and trees are to be removed. Not more than ~~seventy-five percent (75%)~~ fifty percent (50%) of the area of such tree masses nor ~~seventy-five percent (75%)~~ fifty percent (50%) of such ~~eight (8)~~ six (6) inch ~~caliper~~ DBH trees shall be proposed for removal. The removal of any trees that are hazardous, in poor condition, dead, diseased, or considered invasive by the Missouri Department of Conservation on private property, as determined by a licensed landscape architect, architect, engineer, or International Society of Arboriculture (ISA) certified arborist, or other evidence as deemed credible by the City, is not subject to the requirements of this Section.

BILL NO. _____

ORDINANCE NO. _____

2. ~~After approval of subdivision improvement plans and during construction of subdivision infrastructure, the City staff may approve removal of not more than ten percent (10%) of the area of tree masses and not more than ten percent (10%) of the eight (8) inch caliper trees which were indicated as tree masses and trees to remain as depicted on the tree census submitted with the preliminary plat. For example, if the preliminary plat indicated two hundred (200) eight (8) inch caliper trees on the site and fifty (50) were indicated to remain, the City staff could approve the removal of not more than five (5) of those trees. This approval may be granted only if such tree masses or trees are determined to interfere with the construction of such infrastructure. Inadvertent damage to or removal of any such tree mass or such eight (8) inch caliper tree shall be counted towards the maximum ten percent (10%) removal of tree masses and trees to remain.~~
3. Any tree mass removal or tree removal not approved with the preliminary plat shall require the developer to plant ~~three (3) three (3) inch caliper trees for each ten (10) square feet or portion thereof of tree mass area removed and three (3) three (3) inch caliper trees for each tree~~ replace all trees 6-inches DBH on the basis of a one-to-one ratio (1:1) and replace all Such three (3) inch caliper trees shall be of a species contained in the City's list of approved street trees and shall be in addition to the street trees required by Section 410.300. The Department of Public Works shall maintain a list of recommended street trees. trees that are over 20-inches at DBH on the basis of a two-to-one ratio (2:1). All replacement trees shall be a minimum of two-and-a-half (2.5) caliper inches. Such trees shall be of a species contained in the City's list of recommend trees and shall be in addition to the street trees required by Section 410.300. The Department of Public Works shall maintain a list of recommended replacement trees and street trees.
4. ~~After receipt of an initial occupancy permit, additional trees may be removed from individual lots at the discretion of the lot owner.~~

SECTION 3: Section 405.120 Definition of Terms is hereby amended by adding Diameter at Breast Height and revising Tree Mass and Tree Census, to read as follows:

SECTION 405.120 DEFINITION OF TERMS

DIAMETER AT BREAST HEIGHT (DBH)

The diameter of a tree trunk at four and a half (4.5) feet above ground. For species of trees whose normal growth pattern is characterized by multiple stems the diameter at breast height of each stem shall be measured and the average of all measurements shall constitute the diameter of the tree

TREE MASS

A group of trees located in such close proximity that no one (1) tree is more than thirty (30) feet from any other tree, and which contains five (5) or more trees of at least

BILL NO. _____

ORDINANCE NO. _____

~~eight (8)~~ six (6) inch ~~caliper size~~ diameter at breast height. The distance between trees shall be measured from trunk to trunk.

TREE CENSUS

A graphic depiction of a parcel of land which indicates the general location of all tree masses and the general location of all trees which are ~~eight (8)~~ six (6) inch ~~caliper size~~ diameter at breast height or larger including an indication of all such tree masses and all such trees to remain and all such tree masses and all such to be removed.

SECTION 4: Section 410.590 Definitions is hereby amended by adding Diameter at Breast Height and revising Tree Mass and Tree Census, to read as follows:

SECTION 410.590 DEFINITIONS

DIAMETER AT BREAST HEIGHT (DBH)

The diameter of a tree trunk at four and a half (4.5) feet above ground. For species of trees whose normal growth pattern is characterized by multiple stems the diameter at breast height of each stem shall be measured and the average of all measurements shall constitute the diameter of the tree.

TREE CENSUS

A graphic depiction of a parcel of land which indicates the general location of all tree masses and the general location of all trees which are ~~eight (8)~~ six (6) inch ~~caliper size~~ diameter at breast height or larger including an indication of all such tree masses and all such trees to remain and all such tree masses and all such to be removed.

TREE MASS

A group of trees located in such close proximity that no one (1) tree is more than thirty (30) feet from any other tree, and which contains five (5) or more trees of at least ~~eight (8)~~ six (6) inch ~~caliper size~~ diameter at breast height. The distance between trees shall be measured from trunk to trunk.

SECTION 5: This ordinance shall become effective in accordance with Section 3.11 (g) of the City Charter.

ADOPTED THIS ____ DAY OF _____, 2022.

JOE MARTINICH
PRESIDENT OF CITY COUNCIL

APPROVED THIS ____ DAY OF _____, 2022.

BILL NO. _____

ORDINANCE NO. _____

DR. ROBERT HOFFMAN
MAYOR

ATTEST:

KELLIE HENKE
CITY CLERK

Attachment: Draft Ordinance (Residential Tree Requirements TA)

City of Creve Coeur, MO
Friday, September 30, 2022

Chapter 410. Subdivision and Development of Land

Article III. Land Development Standards

Section 410.320. Tree Conservation.

[R.O. 2008 App. B, §22A-32; Ord. No. 1045, 7-25-1983; Ord. No. 1789 §1, 4-8-1996; Ord. No. 4071 §3, 4-9-2007; Ord. No. 5068 §1, 11-10-2008]

- A. Any subdivision preliminary plat submitted after the effective date of this Section shall provide for the conservation of existing trees on the site. Nothing in this Section is intended to preclude the removal of existing trees after the receipt of an initial occupancy permit.
1. A tree census shall accompany every preliminary plat application. The tree census shall graphically depict the general location of all tree masses and all trees of eight (8) inch caliper size or larger. In addition, such census shall indicate which tree masses and trees are to remain and which tree masses and trees are to be removed. Not more than seventy-five percent (75%) of the area of such tree masses nor seventy-five percent (75%) of such eight (8) inch caliper trees shall be proposed for removal.
 2. After approval of subdivision improvement plans and during construction of subdivision infrastructure, the City staff may approve removal of not more than ten percent (10%) of the area of tree masses and not more than ten percent (10%) of the eight (8) inch caliper trees which were indicated as tree masses and trees to remain as depicted on the tree census submitted with the preliminary plat. For example, if the preliminary plat indicated two hundred (200) eight (8) inch caliper trees on the site and fifty (50) were indicated to remain, the City staff could approve the removal of not more than five (5) of those trees. This approval may be granted only if such tree masses or trees are determined to interfere with the construction of such infrastructure. Inadvertent damage to or removal of any such tree mass or such eight (8) inch caliper tree shall be counted towards the maximum ten percent (10%) removal of tree masses and trees to remain.
 3. Any tree mass removal or tree removal not approved with the preliminary plat or subsequently approved by the City staff shall cause the City to require the developer to plant three (3) three (3) inch caliper trees for each ten (10) square feet or portion thereof of tree mass area removed and three (3) three (3) inch caliper trees for each tree removed. Such three (3) inch caliper trees shall be of a species contained in the City's list of approved street trees and shall be in addition to the street trees required by Section **410.300**. The Department of Public Works shall maintain a list of recommended street trees.
 4. After receipt of an initial occupancy permit, additional trees may be removed from individual lots at the discretion of the lot owner.



MEMO TO THE PLANNING AND ZONING COMMISSION

Date: February 2, 2022

Subject: **Residential Tree Replacement Requirements Work Session**

Prepared by: Bethany Moore, City Planner

Meeting Date: February 7, 2022

Attachments: **Proposed Regulations February 2021 Draft**
Staff Memo to P&Z 3-1-21
Staff Memo to P&Z 9-21-20
Staff Memo to Council 2-10-20
Staff Memo to Council 6-22-20
Code Excerpt, Section 410.300 and 410.320
Code Excerpt, Chapter 220, Article II

In 2020, the City Council requested staff to present information on how the City might regulate tree removal and replacement on residential properties associated with major construction activities, such as a new home on an existing lot. Staff presented information to both the City Council and the Planning and Zoning Commission with an outline of the various components of the tree replacement ordinance. For its part, the Planning and Zoning Commission reviewed this information at the September 21, 2020 meeting and expressed support for the development of regulations to require tree replacement on existing residential properties. Staff then refined the requirements for preliminary review and discussion in a work session format to obtain feedback and general direction on March 1, 2021. Since that time, the project has stalled and is now being revisited due to renewed interest, as discussed at the December 6th Joint Work Session.

The attached revised draft provides the components of the proposed ordinance which would apply to all new homes on existing platted lots. This threshold is meant to target only new homes, where greater tree removal is most likely. Smaller construction activities such as room additions, swimming pools, or detached garages would not be subject to any tree removal or replacement requirements. For reference, within the past three years, the City has issued 42 permits for new houses on existing lots.

The submittal requirements would include the preparation of a Tree Protection and Replacement Plan (TPRP) by a licensed landscape architect or ISA certified arborist to show all trees on the property 6-inches or greater. Removed trees would be required to be replaced on a one-to-one basis (not total caliper inches) within the same category of tree based on mature growth height with a minimum size of 3-inches at the time of planting. For example, a White Oak tree couldn't be replaced with an ornamental tree, such as a Dogwood. Dead, diseased or invasive or undesirable tree species can be removed without replacement. Street trees would be required for all new homes, whether or not they are part of a new subdivision or on existing lots. Tree protection standards would be required on site as shown on the approved TPRP. For those trees that are removed at time of final inspection but not shown on the plan, replacement would be required.

Changes to tree removal and replacement regulations to subdivision lots in Section 410.320 are also proposed for discussion in order to reflect the proposed tree conservation regulations applied to existing lots.

After P&Z review at this work session, staff will incorporate any changes and, if necessary, bring them before the Planning and Zoning Commission for a final discussion at the February 22, 2022 work session meeting. Staff would then present them to the Horticulture and Beautification Committee for their input. After these reviews are complete, staff will schedule a public hearing for formal review by the public and the Commission.

Residential Tree Replacement Requirements

New Zoning Ordinance Section 405.560

Purpose And Intent

It is the purpose and intent of this Section to require adequate protection of the City's natural resources, and property values and maintain the goals of the Comprehensive Plan, by providing for the regulations of protection, removal, and the planting of trees on residential lots within the City's residential zoning districts.

Applicability

The provisions of this Section shall apply to existing lots of record that contain a permitted use as a single-family residence, with construction activities that involve a new home or any increase in impervious area of fifty percent (50%), including additions, on an existing residential lot which is subject to a **demolition permit**, residential development permit, or land disturbance/site improvement permit.

Tree Protection and Replacement Plan Submittal Requirements

A Tree Protection and Replacement Plan (TPRP) shall be submitted for review concurrent with the submittal of other required permit applications and plans. The TPRP shall be completed by a licensed landscape architect or certified arborist and include the following minimum information:

1. Project title listing the project name, owner name, and name of individual or firm preparing the plan.
2. North arrow, graphic and written scale which shall be based on the site plan showing existing and proposed grades, utility easements, new water and sewer lines, and location of all improvements
3. A survey of all existing trees 6-inch diameter at breast height (DBH) or greater, providing their type (botanical and common name), size in inches on the property, and identification of the tree whether to be removed or to remain.
4. Graphic depiction showing the location of tree protection fencing.
5. Location of new trees graphically shown and keyed to a tree chart providing size (DBH), species and quantity.

Tree Removal and Replacement Requirements

1. All existing trees in healthy condition measuring 6-inches or greater which are to be removed shall be replaced on the basis of a one-to-one ratio (1:1) based on the total number of trees removed.
2. All replacement trees shall be at least **3 or 2.5** caliper inches in size at time of planting and shall be selected from the City of Creve Coeur's **recommended tree list**. Replacement trees shall be selected from the same category based on mature tree height of the tree removed to the maximum extent practicable.
3. The removal of any trees that are hazardous, dead, diseased or considered invasive by the Missouri Department of Conservation on private property, as determined by a licensed landscape architect, certified arborist, or other evidence as deemed credible by the City, is not subject to the requirements of this Section.
4. The installation of all trees shall be completed prior to the issuance of a final occupancy permit. Any trees that are removed at time of final inspection and are not shown on the approved TPRP shall be replaced in accordance with the requirements of this Section.

5. Street Trees shall be maintained or provided in order to meet **1 tree per 40 feet** of street frontage and does not count toward the replacement of the removed trees on private property.

Tree Protection Requirements

1. All tree protection measures shall be installed prior to the commencement of demolition, excavation, construction, or site work.
2. Tree protection fencing shall be installed around the dripline of each impacted tree or cluster of trees within disturbed areas.
3. City of Creve Coeur Tree Protection Details and Standards shall be provided on the plan and followed at all times.

Discussion Items

- Tree survey required as part of a demolition application.
- Approved Tree List to be created through consultation with the Horticulture, Ecology, and Beautification Committee and maintained by Planning Staff to be available on the City's website but not codified in case changes need to be made.
- Require a certain number of replacement trees to be in the front yard, number dependent on district or lot size. And/or require a minimum number of trees in the front yard separate of replacement trees.

Updates to Ordinance Section 410.320 Tree Conservation

- A. Any subdivision preliminary plat submitted after the effective date of this Section shall provide for the conservation of existing trees on the site. Nothing in this Section is intended to preclude the removal of existing trees after the receipt of an initial occupancy permit.
 1. A tree census shall accompany every preliminary plat application. The tree census shall graphically depict the general location of all tree masses and all trees of eight (8) inch caliper size or larger. In addition, such census shall indicate which tree masses and trees are to remain and which tree masses and trees are to be removed. Not more than seventy-five percent (**75%**) of the area of such tree masses nor seventy-five percent (**75%**) of such eight (8) inch caliper trees shall be proposed for removal. **The removal of any trees that are hazardous, dead, diseased or considered invasive by the Missouri Department of Conservation on private property, as determined by a licensed landscape architect, certified arborist, or other evidence as deemed credible by the City, is not subject to the requirements of this Section.**
 2. After approval of subdivision improvement plans and during construction of subdivision infrastructure, the City staff may approve removal of not more than ten percent (10%) of the area of tree masses and not more than ten percent (10%) of the eight (8) inch caliper trees which were indicated as tree masses and trees to remain as depicted on the tree census submitted with the preliminary plat. For example, if the preliminary plat indicated two hundred (200) eight (8) inch caliper trees on the site and fifty (50) were indicated to remain, the City staff could approve the removal of not more than five (5) of those trees. This approval

may be granted only if such tree masses or trees are determined to interfere with the construction of such infrastructure. Inadvertent damage to or removal of any such tree mass or such eight (8) inch caliper tree shall be counted towards the maximum ten percent (10%) removal of tree masses and trees to remain.

3. Any tree mass removal or tree removal not approved with the preliminary plat or subsequently approved by the City staff shall cause the City to require the developer to plant three (3) three (3) inch caliper trees for each ten (10) square feet or portion thereof of tree mass area removed and three (3) three (3) inch caliper trees for each tree removed. Such three (3) inch caliper trees shall be of a species contained in the City's list of approved street trees and shall be in addition to the street trees required by Section **410.300**. The Department of Public Works shall maintain a list of recommended street trees.
4. After receipt of an initial occupancy permit, additional trees may be removed from individual lots at the discretion of the lot owner.



300 North New Ballas Road • Creve Coeur, Missouri 63141

(314) 432-6000 • Fax (314) 872-2539 • Relay MO 1-800-735-2966

MEMO TO THE PLANNING AND ZONING COMMISSION

Date: March 2, 2022

Subject: **Residential Tree Replacement Requirements Work Session**

Prepared by: Bethany Moore, City Planner

Meeting Date: March 7, 2022

Attachments: Proposed Regulations March 7, 2022 Draft
Staff Memo to P&Z 2-7-22
Staff Memo to P&Z 3-1-21
Staff Memo to P&Z 9-21-20
Staff Memo to Council 2-10-20
Staff Memo to Council 6-22-20
Code Excerpt, Section 410.300 and 410.320
Code Excerpt, Chapter 220, Article II

Staff presented an outline of a tree preservation and replacement ordinance to the Planning and Zoning Commission at the February 7th, 2022 work session. The comments received from the February 7th, 2022 work session have been incorporated into the revised draft to be presented for discussion at the March 7th, 2022 work session.

The attached revised draft provides the components of the proposed ordinance which would apply to all new homes on existing platted lots or any increase in impervious area of fifty percent (50%) including additions. Smaller construction activities such as room additions, swimming pools, or detached garages that do not increase the impervious area of fifty percent (50%) would not be subject to any tree removal or replacement requirements.

The submittal requirements would include the preparation of a Tree Protection and Replacement Plan (TPRP) by a licensed landscape architect or ISA certified arborist to show all trees on the property 6-inches or greater. All existing trees in healthy condition measuring 6 inches or greater at DBH shall be retained at a fifty percent (50%) minimum without penalty. Trees removed beyond the 50% minimum at 6 inches or greater at DBH would be required to be replaced on a one-to-one basis (not total caliper inches) within the same category of tree based on mature growth height with a minimum size of 3-inches at the time of planting and trees greater than 20 inches DBH would be required to be replaced on a two-to-one basis. For example, a White Oak tree couldn't be replaced with an ornamental tree, such as a Dogwood. Dead, diseased or invasive or undesirable tree species can be removed without replacement. Street trees would be required for all new homes, whether or not they are part of a new subdivision or on existing lots. Tree protection standards would be required on site as shown on the approved TPRP. For those trees that are removed at time of final inspection but not shown on the plan, replacement would be required.

Staff also added a payment in lieu of replacement on site in the event that some trees cannot be planted on site due to site constraints. The formula for this fee would need to be established however, it would be based upon the value of the trees removed and not replaced on site. Additionally, the opportunity to request a review by P&Z in the form of a minor site development plan has been included. This option would be available in the event that the applicant does not agree with the requirements as applied to their property and would like to appeal to P&Z for just cause.

Changes to tree removal and replacement regulations to subdivision lots in Section 410.320 are also proposed for discussion in order to reflect the proposed tree conservation regulations applied to existing lots.

After P&Z review at this work session, staff will incorporate any changes. Staff would then present them to the Horticulture and Beautification Committee for their input. After these reviews are complete, staff will schedule a public hearing for formal review by the public and the Commission.

Residential Tree Replacement Requirements

New Zoning Ordinance Section 405.560

Purpose And Intent

It is the purpose and intent of this Section to require adequate protection of the City's natural resources, and property values and maintain the goals of the Comprehensive Plan, by providing for the regulations of protection, removal, and the planting of trees on residential lots within the City's residential zoning districts.

Applicability

The provisions of this Section shall apply to existing lots of record that contain a permitted use as a single-family residence or with construction activities that involve a new home **or any increase in impervious area of fifty percent (50%), including additions**, on an existing residential lot which is subject to a **demolition permit**, residential development permit, or **land disturbance/site improvement permit**. **An applicant that does not agree with the application of these requirements to their property may request review by the Planning and Zoning Commission in the form of a minor site development plan.**

Tree Protection and Replacement Plan Submittal Requirements

A Tree Protection and Replacement Plan (TPRP) shall be submitted for review **as part of the initial permit process, be it demolition, building permit or other required permit applications and plans**. The TPRP shall be completed by a licensed landscape architect or certified arborist and include the following minimum information:

1. Project title listing the project name, owner name, and name of individual or firm preparing the plan.
2. North arrow, graphic and written scale which shall be based on the site plan showing existing and proposed grades, utility easements, new water and sewer lines, and location of all improvements
3. A survey of all existing trees 6-inch diameter at breast height (DBH) or greater, providing their type (botanical and common name), size in inches on the property, and identification of the tree whether to be removed or to remain.
4. Graphic depiction showing the location of tree protection fencing.
5. Location of new trees graphically shown and keyed to a tree chart providing size (DBH), species and quantity.
6. **Street Trees should be specifically marked as such separately from other trees on survey.**

Tree Removal and Replacement Requirements

1. **Fifty (50 percent) of all existing trees in fair or better condition measuring 6-inches or greater at DBH shall be retained on the lot.**
2. **Trees removed beyond the 50 percent lot retention minimum that have 6-inches or more at DBH shall be replaced on the basis of a one-to-one ratio (1:1) based on the total number of trees removed. Trees that are more than 20-inches at DBH shall be replaced on the basis of a two-to-one ratio (2:1).**
3. **If the replacement trees as required by this Section cannot be provided on-site, based upon the opinion of a certified arborist or licensed landscape architect, due to site constraints, a payment in lieu of tree replacement shall be made to the**

City's Forestry fund. This fee shall be established by the City Council based upon a formula representing the valuation of trees removed.

4. All replacement trees shall be at least **3** caliper inches in size at time of planting and shall be selected from the City of Creve Coeur's **approved tree list**. Replacement trees shall be selected from the same category based on mature tree height of the tree removed to the maximum extent practicable.
5. The removal of any trees that are hazardous, in poor condition, dead, diseased or considered invasive by the Missouri Department of Conservation on private property, as determined by a licensed landscape architect, certified arborist, or other evidence as deemed credible by the City, is not subject to the requirements of this Section.
6. The installation of all trees shall be completed prior to the issuance of a final occupancy permit. Any trees that are removed at time of final inspection and are not shown on the approved TPRP shall be replaced in accordance with the requirements of this Section.
7. Street Trees shall be maintained or provided in order to meet **1 tree per 40 feet** of street frontage and does not count toward the replacement of the removed trees on private property.

Tree Protection Requirements

1. All tree protection measures shall be installed prior to the commencement of demolition, excavation, construction, or site work.
2. Tree protection fencing shall be installed around the dripline of each impacted tree or cluster of trees within disturbed areas.
3. City of Creve Coeur Tree Protection Details and Standards shall be provided on the plan and followed at all times. *<Note: Such standards are widely available and will need to be adopted and altered to the needs of Creve Coeur >*

Discussion Items

- Approved Tree List to be created through consultation with the Horticulture, Ecology, and Beautification Committee and maintained by Planning Staff to be available on the City's website but not codified in case changes need to be made.
- The establishment of a Forestry Fund to allow payment in lieu of providing trees on site has been added. The formula needs to be established but would be based upon the total valuation of the removed trees not replaced on site. Fund could be used for the Public Works 50/50 Tree Program.
- Further discussion for an administrative option to allow some alternative flexibility for applicants that are unable to meet the requirements before the request reaches the level of the Planning and Zoning Commission.
- Added a 2 to 1 replacement requirement for trees over 20 inches.

Updates to Ordinance Section 410.320 Tree Conservation

- A. Any subdivision preliminary plat submitted after the effective date of this Section shall provide for the conservation of existing trees on the site. Nothing in this Section is intended to preclude the removal of existing trees after the receipt of an initial occupancy permit.
 1. A tree census shall accompany every preliminary plat application. The tree census shall graphically depict the general location of all tree masses and all trees of six (6) inch caliper size or larger. In addition, such census shall indicate

which tree masses and trees are to remain and which tree masses and trees are to be removed. Not more than fifty percent (**50%**) of the area of such tree masses nor fifty- percent (**50%**) of such six (6) inch caliper trees shall be proposed for removal. **The removal of any trees that are hazardous, in poor condition, dead, diseased or considered invasive by the Missouri Department of Conservation on private property, as determined by a licensed landscape architect, certified arborist, or other evidence as deemed credible by the City, is not subject to the requirements of this Section.**

- ~~2. After approval of subdivision improvement plans and during construction of subdivision infrastructure, the City staff may approve removal of not more than ten percent (10%) of the area of tree masses and not more than ten percent (10%) of the eight (8) inch caliper trees which were indicated as tree masses and trees to remain as depicted on the tree census submitted with the preliminary plat. For example, if the preliminary plat indicated two hundred (200) eight (8) inch caliper trees on the site and fifty (50) were indicated to remain, the City staff could approve the removal of not more than five (5) of those trees. This approval may be granted only if such tree masses or trees are determined to interfere with the construction of such infrastructure. Inadvertent damage to or removal of any such tree mass or such eight (8) inch caliper tree shall be counted towards the maximum ten percent (10%) removal of tree masses and trees to remain.~~
3. Any tree mass removal or tree removal not approved with the preliminary plat or subsequently approved by the City staff shall cause the City to require the developer replace all trees **6-inches DBH on the basis of a one-to-one ratio (1:1) based on the total number of trees removed. Trees that are over 20-inches at DBH shall be replaced on the basis of a two-to-one ratio (2:1).** All replacement trees shall be a minimum of three (3) caliper inches. Such three (3) inch caliper trees shall be of a species contained in the City's list of approved street trees and shall be in addition to the street trees required by Section **410.300**. The Department of Public Works shall maintain a list of recommended street trees.
- ~~4. After receipt of an initial occupancy permit, additional trees may be removed from individual lots at the discretion of the lot owner.~~



300 North New Ballas Road • Creve Coeur, Missouri 63141

(314) 432-6000 • Fax (314) 872-2539 • Relay MO 1-800-735-2966

MEMO TO THE HORTICULTURE, ECOLOGY AND BEAUTIFICATION COMMITTEE

Date: April 6, 2022

Subject: Approved Tree List and Residential Tree Replacement Requirements

Prepared by: Bethany Moore, City Planner

Meeting Date: April 13, 2022

Attachments: Proposed Ord. 405.560 Residential Tree Replacement Requirements
Revised Ord. 410.320 Tree Conservation
Surrounding Municipalities Tree Preservation Ord. Table
Staff Memo to P&Z March 7, 2022
City Tree List
Undesirable Trees List

For the past three years, Staff have been working on the creation of a new ordinance, Ord. 405.560, to address residential tree replacement and revisions to existing ordinance, Ord. 410.320, which relates to tree preservation in subdivision developments. Currently, the City of Creve Coeur does not regulate tree removal except for subdivision plats. An Approved Tree List available on the City's website and updated by Staff is part of the tree conservation revisions. Staff is coming before the HEB Committee in order to seek input on the contents of the Approved Tree List.

Staff presented an outline of a tree preservation and replacement ordinance to the Planning and Zoning Commission at the February 7th, 2022 and March 7th, 2022 work sessions. The comments received have been incorporated into the revised draft attached. The attached revised draft provides the components of the proposed ordinance which would apply to all new homes on existing platted lots or any increase in impervious area of fifty percent (50%) including additions. Smaller construction activities such as room additions, swimming pools, or detached garages that do not increase the impervious area of fifty percent (50%) would not be subject to any tree removal or replacement requirements.

The submittal requirements would include the preparation of a Tree Protection and Replacement Plan (TPRP) by a licensed landscape architect or ISA certified arborist to show all trees on the property 6-inches or greater. All existing trees in healthy condition measuring 6 inches or greater at DBH shall be retained at a fifty percent (50%) minimum without penalty. Trees removed beyond the 50% minimum at 6 inches or greater at DBH would be required to be replaced on a one-to-one basis (not total caliper inches) within the same category of tree based on mature growth height with a minimum size of 3-inches at the time of planting and trees greater than 20 inches DBH would be required to be replaced on a two-to-one basis. For example, a White Oak tree couldn't be replaced with an ornamental tree, such as a Dogwood. Dead, diseased or invasive or undesirable tree species can be removed without replacement. Street trees would be required for all new homes, whether or not they are part of a new subdivision or on existing lots. Tree protection standards would be required on site as shown on the approved TPRP. For those trees that are removed at time of final inspection but not shown on the plan, replacement would be required.

The current tree list on the City's website was created through consultation with HEB for the Street Tree Planting Program administered by Public Works. Planning Staff is seeking HEB's input on what elements from that list should be retained or removed and if elements should be added. Included in the attachments to this memo is a list of surrounding municipalities that have their own Approved Tree Lists. It is the opinion of Staff that the Creve Coeur Approved Tree List be compiled using the existing tree list for the Street Tree Planting Program, the existing Undesirable Trees List and additional information gathered through a thorough review of the Approved Tree Lists maintained by surrounding municipalities. HEB's recommendations are encouraged.

After HEB review and comment, Staff will compile and revise a list of Approved Trees. Staff would then present it to the Planning and Zoning Commission in conjunction with the Text Amendment for the introduction of Ordinance 405.560 and the revisions to Ordinance 410.320 as part of a public hearing for formal review by the public and the Commission.

Residential Tree Replacement Requirements

New Zoning Ordinance Section 405.560

Purpose And Intent

It is the purpose and intent of this Section to require adequate protection of the City's natural resources, and property values and maintain the goals of the Comprehensive Plan, by providing for the regulations of protection, removal, and the planting of trees on residential lots within the City's residential zoning districts.

Applicability

The provisions of this Section shall apply to existing lots of record that contain a permitted use as a single-family residence or with construction activities that involve a new home or any increase in impervious area of fifty percent (50%), including additions, on an existing residential lot which is subject to a demolition permit, residential development permit, or land disturbance/site improvement permit. An applicant that does not agree with the application of these requirements to their property may request review by the Planning and Zoning Commission in the form of a minor site development plan.

Tree Protection and Replacement Plan Submittal Requirements

A Tree Protection and Replacement Plan (TPRP) shall be submitted for review as part of the initial permit process, be it demolition, building permit or other required permit applications and plans. The TPRP shall be completed by a licensed landscape architect or certified arborist and include the following minimum information:

1. Project title listing the project name, owner name, and name of individual or firm preparing the plan.
2. North arrow, graphic and written scale which shall be based on the site plan showing existing and proposed grades, utility easements, new water and sewer lines, and location of all improvements
3. A survey of all existing trees 6-inch diameter at breast height (DBH) or greater, providing their type (botanical and common name), size in inches on the property, and identification of the tree whether to be removed or to remain.
4. Location of all trees removed in the 12 months prior to the date of application, if known.
5. Graphic depiction showing the location of tree protection fencing.
6. Location of new trees graphically shown and keyed to a tree chart providing size (DBH), species and quantity.
7. Street Trees should be specifically marked as such separately from other trees on survey.

Tree Removal and Replacement Requirements

1. Fifty (50 percent) of all existing trees in fair or better condition measuring 6-inches or greater at DBH shall be retained on the lot.
2. Trees removed beyond the 50 percent lot retention minimum that have 6-inches or more at DBH shall be replaced on the basis of a one-to-one ratio (1:1) based on the total number of trees removed. Trees that are more than 20-inches at DBH shall be replaced on the basis of a two-to-one ratio (2:1).
3. If the replacement trees as required by this Section cannot be provided on-site, based upon the opinion of a certified arborist or licensed landscape architect, due to site constraints, a payment in lieu of tree replacement shall be made to the City's Forestry

- fund with staff approval if hardship has been established. This fee shall be established by the City Council based upon a formula representing the valuation of trees removed.
4. All replacement trees shall be at least 3 caliper inches in size at time of planting and shall be selected from the City of Creve Coeur's approved tree list. Replacement trees shall be selected from the same category based on mature tree height of the tree removed to the maximum extent practicable.
 5. Trees removed within one (1) year preceding the submittal of a permit application to the City must be documented by a dated conditions report prepared by a certified arborist or licensed landscape architect, dated conditions photographs, and a copy of the work order with date of service. Any tree removed within one (1) year prior to the submittal of a permit application that is not documented and approved by the City will be considered in Good condition by default.
 6. The removal of any trees that are hazardous, in poor condition, dead, diseased or considered invasive by the Missouri Department of Conservation on private property, as determined by a licensed landscape architect, certified arborist, or other evidence as deemed credible by the City, is not subject to the requirements of this Section.
 7. The installation of all trees shall be completed prior to the issuance of a final occupancy permit. Any trees that are removed at time of final inspection and are not shown on the approved TPRP shall be replaced in accordance with the requirements of this Section.
 8. Street Trees shall be maintained or provided in order to meet 1 tree per 40 feet of street frontage and does not count toward the replacement of the removed trees on private property.

Tree Protection Requirements

1. All tree protection measures shall be installed prior to the commencement of demolition, excavation, construction, or site work.
2. Tree protection fencing shall be installed around the dripline of each impacted tree or cluster of trees within disturbed areas.
3. City of Creve Coeur Tree Protection Details and Standards shall be provided on the plan and followed at all times. *<Note: Such standards are widely available and will need to be adopted and altered to the needs of Creve Coeur >*

Updates to Ordinance Section 410.320 Tree Conservation

- A. Any subdivision preliminary plat submitted after the effective date of this Section shall provide for the conservation of existing trees on the site. Nothing in this Section is intended to preclude the removal of existing trees after the receipt of an initial occupancy permit.
 1. A tree census shall accompany every preliminary plat application. The tree census shall graphically depict the general location of all tree masses and all trees of six (6) inch caliper size or larger. In addition, such census shall indicate which tree masses and trees are to remain and which tree masses and trees are to be removed. Not more than fifty percent (50%) of the area of such tree masses nor fifty- percent (50%) of such six (6) inch caliper trees shall be proposed for removal. The removal of any trees that are hazardous, in poor condition, dead, diseased or considered invasive by the Missouri Department of Conservation on private property, as determined by a licensed landscape architect, certified arborist, or other evidence as deemed credible by the City, is not subject to the requirements of this Section.

2. Any tree mass removal or tree removal not approved with the preliminary plat or subsequently approved by the City staff shall cause the City to require the developer replace all trees 6-inches DBH on the basis of a one-to-one ratio (1:1) based on the total number of trees removed. Trees that are over 20-inches at DBH shall be replaced on the basis of a two-to-one ratio (2:1). All replacement trees shall be a minimum of three (3) caliper inches. Such three (3) inch caliper trees shall be of a species contained in the City's list of approved street trees and shall be in addition to the street trees required by Section 410.300. The Department of Public Works shall maintain a list of recommended street trees.

city
of

CREVE COEUR

300 North New Ballas Road • Creve Coeur, Missouri 63141
(314) 432-6000 • Fax (314) 872-2539
www.crevecoeurmo.gov

May 12, 2022

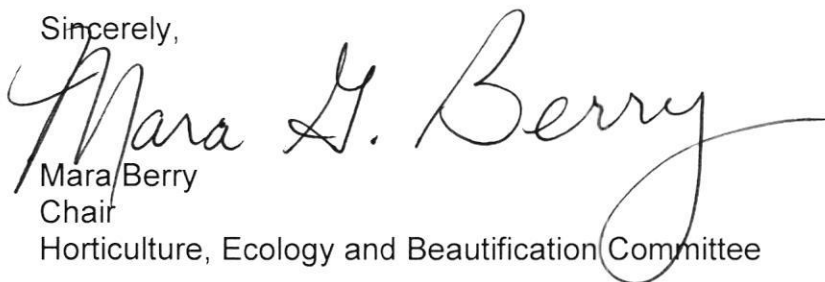
ATTN: Jason Jaggi, Director of Community Development
Bethany Moore, City Planner

RE: City's Recommended Tree List and Proposed Tree Replacement text amendment
to current Ordinance 405.60.

Let this letter serve as official notice that the above-mentioned topics were discussed with the Horticulture, Ecology and Beautification Committee Members during our April 13, 2022 and May 11, 2022 Committee Meeting by Bethany Moore and Jason Jaggi.

After discussions, the HEB Committee fully supports the Recommended Tree List and Proposed Tree Replacement text amendment to current Ordinance 405.60 by the City of Creve Coeur.

Sincerely,


Mara Berry
Chair
Horticulture, Ecology and Beautification Committee

Attachment: HEB Letter of Support 6-9-22 (Residential Tree Requirements TA)



MEMO TO THE MAYOR AND CITY COUNCIL

Date: June 17, 2020

Subject: Tree Preservation and Replacement on Residential Properties

Prepared by: Jason W. Jaggi, AICP, Director of Community Development

Meeting Date: June 22, 2020

Attachment: 2-5-20 Staff Memo
Code Excerpt, Section 410.300 and 410.320
Code Excerpt, Chapter 220, Article II

As discussed in the staff memo dated February 5, 2020, the City of Creve Coeur's regulations provides that when subdividing a property, a minimum of 25% of the existing trees and tree mass must be maintained, per Section 410.320 Tree Conservation under Chapter 410 Subdivision and Development of Land. Should additional trees be removed that were not indicated on the approved subdivision plan, they must be replaced at a 3:1 ratio, in addition to any Street Trees that are required under Section 410.300 Street Trees. However, once the project has been completed and final inspection/occupancy obtained, the City does not have a regulation regarding maintaining those trees on private residential properties, and the homeowner may remove any of the trees on their lot. The Street Trees are usually placed in the City's right-of-way (once the City has accepted it as a public road) and therefore, cannot be removed without the approval of the City. Additionally, the City does not prohibit the removal of any trees in anticipation of redevelopment of a lot after approval of the initial subdivision.

Chapter 220 Weeds and Vegetation, Article, II, Trees and Shrubs applies to trees, plants and shrubs that are located within street rights-of-way, parks and publicly owned places of the City. This authority also extends to private property but only for trees or other plant material that constitute a hazard or threat.

To establish a tree conservation and replacement ordinance for individual residential properties would require updating various sections of the City's codes. For changes to the Zoning Ordinance, a text amendment application with a public hearing and recommendation by the Planning and Zoning Commission and final approval by the City Council would be required. As previously discussed with the City Council, staff would work with the Horticulture, Environment and Beautification Committee (HEB) to craft the requirements for a new ordinance. The HEB would then provide its recommendations to the Planning and Zoning Commission for their consideration. With this approach, Planning staff attended the HEB meeting on March 11th and informed them of City Council's desire to consider a tree preservation and replacement ordinance that would apply to existing residential properties. Staff presented background information and reviewed possible components of an ordinance and summarized ordinances that are in place in surrounding communities. The HEB was supportive of moving forward with such an ordinance.

At this time, staff would like to provide an overview of the components of the ordinance and receive feedback from the City Council as to the level of regulations desired. Staff will proceed accordingly based on the direction received from Council.

Components of a Residential Tree Preservation and Replacement Ordinance

Based on similar ordinances from other communities, staff has outlined the essential components of the ordinance with areas highlighted for discussion.

1. Applicability

This ordinance would apply only to existing, platted single family residential lots located within a single family zoning district when a new home is proposed or when a major addition is proposed.

Discussion Items: The term Major Addition would need to be defined. Similar ordinances define major as an increase of 50% or more of existing impervious coverage. If a more restrictive approach is desired, the requirements of this ordinance could occur with the filing of a Residential Development Permit. The RD permit is an integrated permit issued by the Building Division associated with most construction activities on a single family property. This includes new single family homes, additions, detached buildings and pools. It could also be tied to a land disturbance permit that is required when 2,000 square feet or more of disturbance activities such as grading or excavating are involved. Additionally, staff would like to confirm that this ordinance would not apply to non-residential uses in residential districts (schools, places of worship, etc.) or to apartment communities or other non-single family residential districts.

2. Administration

This ordinance would be administered by the Department of Community Development. The Building Division, including plans examiners and inspectors, as well as the City Planner would be involved in administering this ordinance. Depending on the level of restrictions and requirements desired, the City may want to engage the services of a contracted landscape architect or certified arborist to conduct plan reviews and perform inspections. The fees for such services would be passed on to the applicant based on a fee schedule as part of the approved contract.

3. Definitions

New definitions of terms would be added to the Zoning Code as needed to support the ordinance.

4. Tree Preservation and Replacement Plan

This section would outline the components of a tree protection and replacement plan that would need to be submitted for staff review at the time a permit is applied. A site plan would be needed showing the property boundaries and all proposed improvements (structures, paved surfaces, utility connections, etc.), existing trees, trees to be removed and trees to be protected. For trees that are to be protected, the City would require standard protection details and notes to be shown on the plan (protective fence around trees, etc.). This plan would need to be prepared by a licensed landscape architect or certified arborist.

5. Tree Replacement Requirements

Staff would suggest that all existing deciduous trees, 6-inches in diameter or greater and all coniferous (evergreen) trees of at least 15-feet in height are required to be shown on the existing tree plan. The requirements for tree preservation and replacements would be within this section. It would also be appropriate to include an updated approved tree list as part of this ordinance.

Discussion Items: The City could take the approach that there are no defined requirements for the protection of existing trees and focus more on the need to replace a portion of the trees that are removed. It is inevitable that some trees will need to be removed to allow construction to occur. The replacement ratio could be based on total

caliper trees removed for trees that are in healthy condition. Replacement trees would be required based on the City's approved tree list with a minimum size of 3-caliper inches at time of planting.

If tree preservation is desired, there are many approaches to this goal. Some ordinances set forth a desired amount of trees to remain on site with greater requirements for removal of trees above this amount. Other ordinances classify trees as "landmark" or "contributing" with specific replacement requirements for these classification of trees. If the applicant cannot meet the requirements for replacement of trees on site, some ordinances require a payment in lieu to the City presumably for the planting of trees in public lands in the city. It is important to note that most cities do not prohibit the removal of any single tree. The ordinances instead focus on replacement requirements to compensate for lost tree cover. Additionally, trees that are in poor condition, are hazardous, or of an undesirable species are typically exempt from any replacement requirement.

6. Inspections

Inspections by city building inspectors or a contracted professional would be expected to ensure the requirements of the ordinance are being met. At a minimum, an initial inspection would need to be performed to ensure tree protection fencing is installed and that the trees removed are consistent with approved plans. A final inspection prior to Certificate of Occupancy approval would also need to be conducted to ensure the replacement trees meet code and are consistent with approved plans.

As presented in the February staff report, several cities in St. Louis County regulate tree removal associated with construction activities on individual residential properties. These communities have determined that trees help to define community character, add to the value of residential property and offer environmental benefits such as erosion control and reduced energy costs for the home. As an additional regulatory requirement, a tree ordinance in the manner described would be expected to add to the cost of construction for many residential projects and also would involve additional staff time in the form of plan reviews and inspections.

Staff will be present at the meeting to answer any questions from the City Council. Upon receiving further direction as to the appropriate level of regulating trees on residential property, staff will prepare a draft ordinance and work with the HEB and P&Z on a final recommended version.



300 North New Ballas Road • Creve Coeur, Missouri 63141
(314) 432-6000 • Fax (314) 872-2539 • Relay MO 1-800-735-2966
www.creve-coeur.org

MEMO TO THE PLANNING AND ZONING COMMISSION

Date: September 29, 2022

Subject: **Electric Vehicle Charging Stations Work Session**

Prepared by: Bethany L. Moore, City Planner

Meeting Date: October 3, 2022

Attachments: Fairfax, Virginia EV Charging Memo, Ameren Missouri EV Charging Guide for Business, Electrek-Charging Standard and How They Differ, Summary of Best Practices in Electric Vehicle Ordinances pg. 9-12 and 19-21 and Planning for Electric Vehicle Charging Facilities

Electric vehicle charging stations are becoming more common and all over the country municipalities are determining how to regulate this new use. The number of publicly available fast electric vehicle chargers worldwide jumped from 1,740 in 2012 to 563,910 in 2021. Creve Coeur has several single stall charging stations throughout the city and recently had the first application for a larger, multi-stall installation of chargers via EV Go at the Plaza Shops. The application included installation of Level 2 and Level 3 chargers and came before the Commission as a minor site plan in order to review the use's impacts on the site and surrounding area. The application was ultimately denied after lengthy discussion with the applicant. This application was undoubtedly the first of many that Creve Coeur will see as the popularity of electric vehicles grow and the charging infrastructure across the country expands. With these considerations in mind, it is imperative that the City establish the appropriate regulations to prepare for future requests.

St. Louis County and St. Louis City both have fairly new regulations for electric vehicle charging. The goal of those ordinances is focused on providing the infrastructure necessary to support the installation of electric vehicle charging stations. Very little information is available from surrounding municipalities as to the regulation of the use. Staff's goal for the discussion of EV charging regulations is to create requirements for this use that allow the public to take advantage of these technologies that are quickly becoming necessary while also protecting the aesthetic qualities of existing sites and mitigating the potential impacts on surrounding uses.

Background on EV Charging

According to Global EV Outlook 2022's Data Explorer, "Sales of electric vehicles (EVs) doubled in 2021 from the previous year to a new record of 6.6 million. In 2012, just 120 000 electric cars were sold worldwide. In 2021, more than that many are sold each week. Nearly 10% of global car sales were electric in 2021, four times the market share in 2019. This brought the total number of electric cars on the world's roads to about 16.5 million, triple the amount in 2018. Global sales of electric cars have kept rising strongly in 2022, with 2 million sold in the first quarter, up 75% from the same period in 2021." The rising demand for electric vehicles also leads to a rising demand for publicly available charging stations. Charging stations are popping up on commercial sites for public use either free to patrons of the primary use where the chargers are located or more commonly, at a cost via companies such as EV Go.

Many businesses and offices see the chargers as an incentive; either for employees or business patrons. EV charging stations can be free standing pedestals or wall mounted. Both require additional equipment and power connections with the size of such utilities dependent on the type of charging station.

There are currently 3 common types of charges on the market today: Level 1, Level 2, and DC Fast chargers, sometimes called Level 3. Level 1 produces the lowest amount of charging power and is equivalent to a standard 120-V AC wall outlet. The range per hour provided by Level 1 chargers amounts to roughly 5 miles of range per 1 hour of charging. Although not the most desirable chargers for distance drivers, this type of charging does allow most EVs to be charged almost anywhere. Level 2 is equivalent to 240-V electric connection and offers a larger range per hour than Level 1 at roughly 30 miles of range per 1 hour of charge. Level 2 chargers can charge most EVs fully in 8 hours. Level 2 is the most common level of charger typically provided by individual businesses or offices due to cost of installation and range per hour output. DC Fast chargers, as the name suggests, are the fastest of the three levels and provide a full charge in less than an hour. Due to the higher power capabilities of DC Fast chargers, they require a higher power supply and typically the largest utility equipment. DC Fast chargers are ideal for long distance travel and are the most ideal charging type needed to build a national framework of chargers to enable long-distance EV trips.

Framework for New Regulations

Staff seeks to regulate EV charging stations as an Accessory Use. Per Section 405.460, an Accessory Use is only permitted in connection with a principal use, both uses must be permitted in the district and is subject to the established Use Limitation and Location requirements for all accessory uses and structures. As a permitted accessory use, EV charging stations would be able to be approved at a staff level without the need for Planning and Zoning Commission approval of each project if the requirements for such a use were met. This would also avoid having lots used only for EV Charging without a principal building and give the Commission the ability to regulate which zoning districts allow EV charging stations. Any EV charging station project that does not meet the requirements would come before the Commission as a Minor Site Plan.

The following are areas for discussion that staff is seeking the Commission's feedback on in order to create a set of draft regulations for further discussion at a later work session:

- **Zoning districts in which the use is allowed.** Staff suggests allowing charging stations in all commercial and light industrial districts. Single chargers for personal, residential use would be allowed.
- **Site location.** Staff suggests creating placement requirements for the chargers and their equipment to mitigate any site traffic issues and negative impacts on the streetscape or surrounding uses. Example: No charging stations shall be placed in the first row of parking stalls adjacent to a street.
- **Screening.** Screening should be a requirement for all EV charging stations and is a key component in the integration of the chargers into the site. The charging stations themselves should include landscaping elements around and between them in some way in order to help them to blend in to the site. The equipment associated with charging stations, especially Level 3 charging stations, is of the utmost concern as they tend to be large and bulky. Screening these elements in some way, either with fencing or landscaping or some combination of both is ideal.
- **Quantity and Parking.** Each EV charging station requires a parking space in order to be used. Each parking space could be occupied for several hours as the vehicle charges. This takes available parking spaces away from the principal use. Limiting the number of charging stations allowed per site or tying the number of charging stations to the size of the lot, number of available parking spaces or some other factor can help to regulate the amount of available parking spaces used for this use on any given site. Since EV charging is something that staff and the country as a whole is trying to encourage, counting the required parking spaces as a fraction instead of a 1:1 basis is also suggested as an incentive.

- **Signage.** EV Charging stations can include a large amount of signage on the charging stations, on the parking spaces and with free standing signage. This is an area worth considering in order to prevent visual clutter.
- **Site Coverage.** EV charging stations would count towards site coverage if they are placed within existing non-paved areas. To encourage their use, EV charging stations and related equipment could either be eliminated completely from the site overage requirement or be counted as a fraction of the total area.

In addition to these zoning considerations, staff would also like the Commission to provide input on the desirability to require electric car charging facilities as part of new commercial and/or residential construction. After P&Z review at this work session, staff will incorporate any comments or suggestions into draft guidelines for discussion at a subsequent work session. After discussion on the draft guidelines with P&Z, staff will take the guidelines to a discussion with City Council before scheduling a public hearing for formal review by the public and the Commission.



County of Fairfax, Virginia

MEMORANDUM

APPLICABLE ZONING PROVISIONS FOR ELECTRIC VEHICLE CHARGING SPACES

January 2021

This memorandum supersedes the July 12, 2013, [memorandum](#) issued by the Zoning Administration Division related to electric vehicle charging (EVC) spaces. EVC spaces may be deemed a permitted accessory use serving another principal use, such as an office park, industrial park, institutional use, shopping center, retail sales establishment, or multiple family development, when the following conditions are met:

1. EVC spaces will be included in determining the required parking for the development. However, any reduction of parking spaces due to the installation of EVC spaces or associated equipment may require review and approval of a Parking Tabulation to ensure that there is enough parking to serve the development. If the tabulation determines there is not enough parking with the EVC installation, staff will evaluate the feasibility of potential options to meet a parking requirement for the site with the EVC installation. This evaluation does not ensure approval.
2. When located in any residential development, the type of EVC installed is limited to Level 1 or Level 2 facilities (as defined by the U.S. Department of Energy) unless it is located in a parking structure. The EVC is available only for use by the residents and their guests.
3. When located in any non-residential or mixed use development, any EVC space must be located in a parking structure or on a parking lot that serves a principal use.
4. The EVC space and equipment must be located so as not to interfere with any vehicular, bicycle, or pedestrian circulation or block any fire lanes or access into the site.
5. The maximum height of the EVC dispenser and any associated transformer, switchgear, or other similar items is nine feet. This standard applies only when the EVC dispenser is located in a surface parking lot and not mounted on the exterior of the principal structure, and when located on the top level of a parking structure and open to the sky. Furthermore, any EVC dispenser and associated equipment located on the top level of a parking structure may not exceed the maximum allowable height limit for the parking structure.
6. EVC spaces and related equipment cabinets or structures must not be located in any required transitional screening yard or impact any required internal parking lot landscaping.



January 2020

Page 2

7. Related equipment, including transformers, switchgear, and other similar items must be screened with a fence, wall, berm, evergreen landscaping, or any combination. Any landscaping used for screening purposes must be maintained.
8. Each EVC dispenser is permitted to have a digital display area up to one square foot in size. A digital display area greater than one square foot is regulated as a sign and is subject to Article 12.
9. Any outdoor lighting associated with an EVC space must comply with the outdoor lighting requirements in Article 14.
10. A canopy is not permitted in association with an EVC space located in a surface parking lot unless it supports a solar collection system. Any canopy supporting a solar collection system must comply with height and setback requirements for a freestanding accessory structure in Article 10 and cannot include signage or illumination on the sides of the canopy. On the top level of a parking structure, a canopy may be allowed if it does not include signage or illumination on the sides of the canopy.
11. EVC spaces, including an associated equipment, must be in conformance with any zoning approvals.

EVC spaces that do not comply with the criteria above are considered a principal use and are deemed a service station use under the Zoning Ordinance.

Any proposal to establish EVC spaces that serve a principal use must submit the attached checklist to the Ordinance Administration Branch of the Zoning Administration Division at the address or facsimile number on this letterhead or by email at ordadmin@fairfaxcounty.gov. Proposals must include a letter of consent from the property owner or authorized agent, architectural/building plans for the EVC space, a site layout showing the proposed location of the EVC space and the number of parking spaces, if any, the EVC space will use.

All EVC spaces, whether permitted as an accessory or a principal use, may be subject to electrical and/or building permit approval and may require site plan approval if there is land disturbance of more than 2,500 square feet. Information pertaining to electrical and building permits is available from the Customer and Technical Support Center (CTSC) of the Land Development Services (LDS) at 703-222-0801 (option 2). Site plan information is available from LDS at 703-324-1720. Additionally, any reduction of parking spaces to less than what is required for the development due to the installation of EVC spaces or associated equipment will require a parking tabulation. For information on parking tabulations, please contact the Site Development and Inspections Division at 703-324-1720.

EV Charging Installation Guide for Business



Attachment: Readings for Work Session 10.3.22 (EV Charging Station Requirements Work Session)

Welcome 1**Introduction 2****Charging Overview 3**

- Defining EVSE
(Electric Vehicle Supply Equipment) 3
- Types of Charging Equipment 3
- Connectors and Plugs 4
- Recommendations 6
- 'Smart' or Basic Charging? 10

Payment Options 11**Monitoring and Reporting 12****Considerations 12**

- Location 12
- Convenience 12
- Driver Safety 13
- Mounting Type 13
- Internet Connection 14
- Protecting Chargers 14
- Aesthetics 15
- Signage and Marking 15
- Accessibility 16
- Potential for Growth 16
- Cable Management 16
- Benefits of Offering Charging 17

Associated Costs 18

- Equipment 18
- Installation 19
- Internet Connection 19
- Maintenance 20
- Energy Use 20
- Incentives 20

Checklist 21

- Goals and Scope 21
- Internal Buy-In 21
- Budget and Timeline 21
- Incentives 21
- Installation Contractor 21
- Project Design 22

Conclusion 23

- Additional Resources 23

Welcome

Ameren Missouri is your EV charging resource. EVs are increasingly showing up at workplace and community parking lots throughout our region. Ameren Missouri will help ensure you are prepared when your employees and/or customers begin asking to charge their cars at your location.

As part of our commitment to making this transition as easy as possible for our valued customers, Ameren Missouri has created this QuickStart Guide to help you understand what you need to know about charging equipment, the steps to plan for installation, and the benefits of providing this service.

For more information about vehicles, fleet options, incentives, and additional resources visit AmerenMissouri.com/EV.



Introduction

Over 1.5 million electric vehicles (EV)¹ are now on the road across the United States and sales of EVs are growing here in Missouri. With more than 40 models now available and many more poised for release over the next several years - including fleet, medium, and heavy-duty options - the demand for charging options to power the vehicles is also anticipated to continue growing. Business owners across our region have the opportunity to join this rapidly growing sector by installing EV charging infrastructure at workplace, multi-family dwelling, or other consumer destination locations. Offering charging can provide many benefits including attracting and retaining top workforce talent, establishing your company as a leader in sustainability, and increasing customer satisfaction and time spent at your establishment.

This guide will help you understand the different kinds of charging equipment, how to choose the best location to install chargers, the benefits to offering charging at your business, and potential installation costs. A project checklist is also included to help you get started.

¹ <https://www.eei.org/issuesandpolicy/electrictransportation/Pages/default.aspx>



Charging Overview

Defining EVSE (Electric Vehicle Supply Equipment)

Electric Vehicle Supply Equipment (EVSE), colloquially known as “charging stations,” is the equipment used to safely supply electricity to an EV from a power source. EVSE communicates with the EV to ensure safety for the user, vehicle, and power grid. EVSE can be installed at residences, workplaces, retail, public places, and fleet facilities. How quickly a battery charges depends on multiple factors including the type of battery, vehicle considerations, and the type of the EVSE.

Types of Charging Equipment

Level 1: Easy

Level 1 charging uses a standard 120-V AC plug and typically provides about 4-5 miles of range per hour. Most EVs come with a cord for level 1 charging. If desired, a dedicated level 1 charger can be installed at workplaces or community locations, though for at-home charging, access to a standard wall outlet is adequate.

Level 2: Faster

Level 2 charging uses a 240-V or 208-V electrical connection and typically provides about 25 miles of range per hour or a full charge in 4-8 hours. Level 2 EVSE requires a dedicated circuit of 20-80 Amps depending on the specific requirements of the chosen EVSE. It is common for workplaces, retail, public places, and homes to have Level 2 charging. Level 2 chargers are essentially a universal connector that will be described in the Connectors and Plugs section below.

DC Fast Charging: Fastest

A DC fast charger can typically add up to 80% charge in 30 minutes. DC Fast Charging is fundamentally different from Level 1 and Level 2 charging. It requires a higher power supply, typically 480V and 100+ Amps. The charging rate depends on the battery design of the EV and the maximum rate of the charger. Today's EVs can accept DC charging rates ranging from 50kW to 150kW, while some near-future EVs will have charging rates above 300kW. DC fast chargers today have the capability of delivering power at a rate of 50kW to 350kW. Before a DC charging session begins, the EV and the charger communicate to determine the appropriate charging rate for the EV batteries. DC Fast charging uses several types of connectors as described below that vary depending upon make and model of the vehicle. DC fast charging infrastructure is essential for enabling long-distance EV travel and is being developed throughout the country to connect cities.



Level 1 Example



Level 2 Example



DC Fast Charging Example

Connectors and Plugs

Any vehicle with a standard SAE J1772 receptacle will be able to use Level 1 and Level 2 charging. Since all major manufacturers support this standard (Tesla provides adapters), there's no need for drivers to be concerned about compatibility with the charging infrastructure. Different manufacturers use different adapters for fast charging including the CHAdeMO (used by Nissan) and Combined Charging System (CCS) (used by most automakers).

Note, because Tesla has a proprietary connector type, other EVs are not able to connect to Tesla charging stations. However, Tesla owners have access to accessory adapters and can utilize SAE J1772 and CHAdeMO plugs.

Summary Table

Level	Voltage	Charge Rate	Connector	Auto Makers
Level 1				
	120-V	~5 miles per hour	SAE J1772 	All
Level 2				
	208-V or 240-V	~up to 25 miles per hour	SAE J1772 	All (Tesla with adapter)

Level	Voltage	Charge Rate	Connector	Auto Makers
DC Fast Charger				
	480-V	~up to 80% in 30 minutes	CHAdeMo 	Nissan Mitsubishi
	480-V	~up to 80% in 30 minutes	CCS (Combined Charging System) 	Most automakers including: BMW Jaguar Chevrolet Audi/VW Ford
	480-V	~up to 80% in 30 minutes	Tesla 	Tesla

Recommendations

When thinking about what kind of EVSE to install, consider your goals, how it is most likely to be used, and how to bring the most benefit to both your intended users and your organization. Assuming you want to encourage use of EVs, convenience for drivers is a key consideration.



Workplace

Workplaces and homes are ideal for EV charging given the long dwell times. The energy needed for Missouri's average daily commute of 40 miles can easily be recovered using a level 1 or level 2 charger during the workday. While dedicated workplace charging is recommended, there are two approaches to consider.

- For smaller campuses that make moving vehicles or charging connectors relatively easy, 32 Amp level 2 chargers may be shared and allow multiple users in one day. Another consideration is length of employee commutes.
- For larger campuses with hundreds of employees when moving vehicles is inconvenient and a distraction from core work and sharing chargers is not practical, 16 Amp Level 2 chargers can be used to provide an ample 12 miles of range per hour of charge. This also may allow more stations to be installed due to lower power requirements for each charging plug. Some charging stations have the ability to split a single electrical feed into two 16 Amp stations as well to provide this type of charging while only having to wire one circuit to the unit. This can also save on installation costs as well as electrical panel requirements.

Employees view workplace charging as a great benefit. It also helps to create a stronger culture of sustainability and encourages the growth of electric vehicle adoption.

Additional workplace considerations include fleet vehicles such as security and campus use vehicles. For vehicles with a range of 200 or more miles, an overnight level 2 charge will provide the vehicle a full charge at the start of each day.



Multi-Family Dwellings

A multi-family dwelling like a large apartment building is another place where charging station installation can be a great benefit. Dedicated 32 Amp level 2 charging stations are preferred for residents who drive EVs to ensure they have the peace of mind to access charging whenever needed without the difficulty of coordinating with neighbors.

There are several ways to offset the cost of the energy such as implementing a small EV parking fee or including usage in the rent payment. Increasingly, multi-family property owners are choosing to offer EV charging as an amenity to differentiate their property and attract new residents or retain clients.

Public Locations



Retail

Retail destinations like malls, restaurants, grocery stores, hotels, and more can often benefit from level 2 charging. Visitors are able to top off their vehicle while at these locations utilizing services, shopping, or staying overnight. This approach can also attract new customers for these businesses by offering charging as an amenity.



Parking Facilities

Another great location for EVSE installation are public parking garages and lots. These lots, depending on the rate of traffic, can benefit from the installation of both level 1 and level 2 charging. A parking garage or lot with long dwell times is a great opportunity to offer the benefit of level 1 charging. Similarly, a surface parking lot averaging two to three hour dwell times is a great candidate for level 2 charging.

Retail and public locations adjacent to highways or major routes through and between cities can be good candidates for DC fast charger installations where drivers on long-distance trips can refuel their EVs for 30-60 minutes while taking a break and patronizing local businesses.

Summary Table

Location	EVSE Recommendation
Workplace	Level 2
Multi-Family Dwelling	Level 2
Public/Around Town	Level 2, DC Fast Charger



Workplace Charging

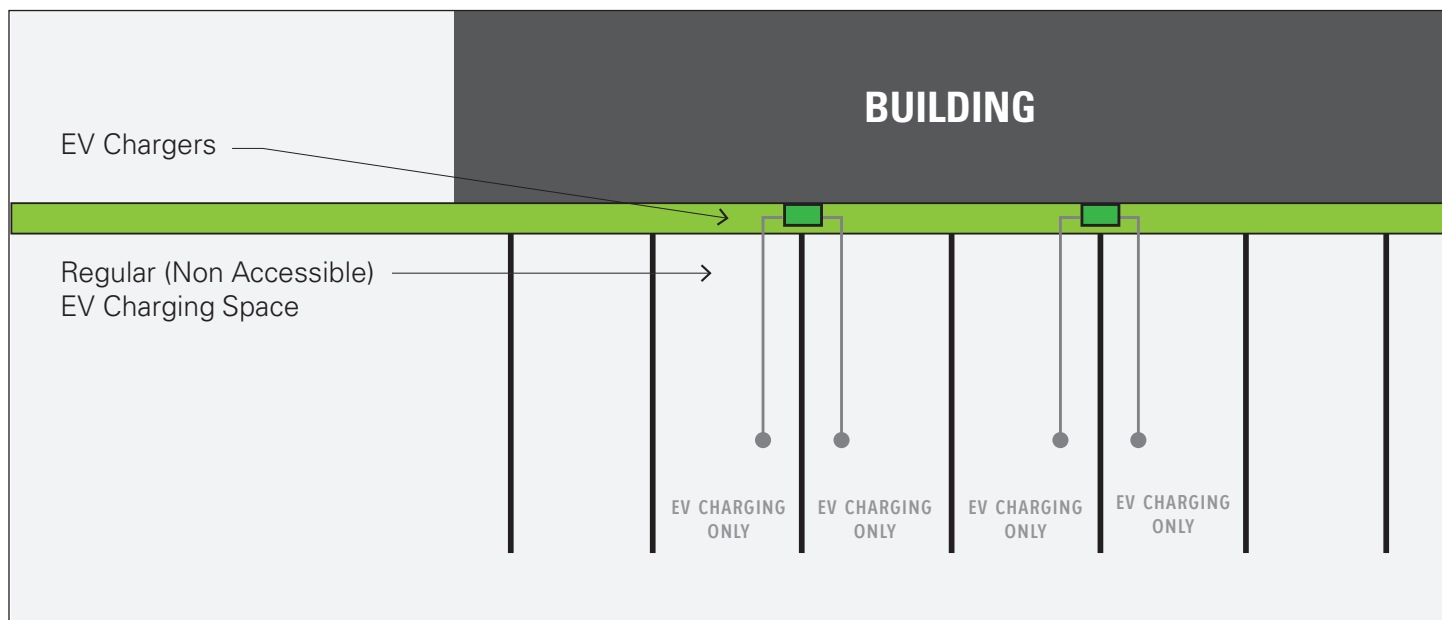


Multi-Family Dwelling Charging

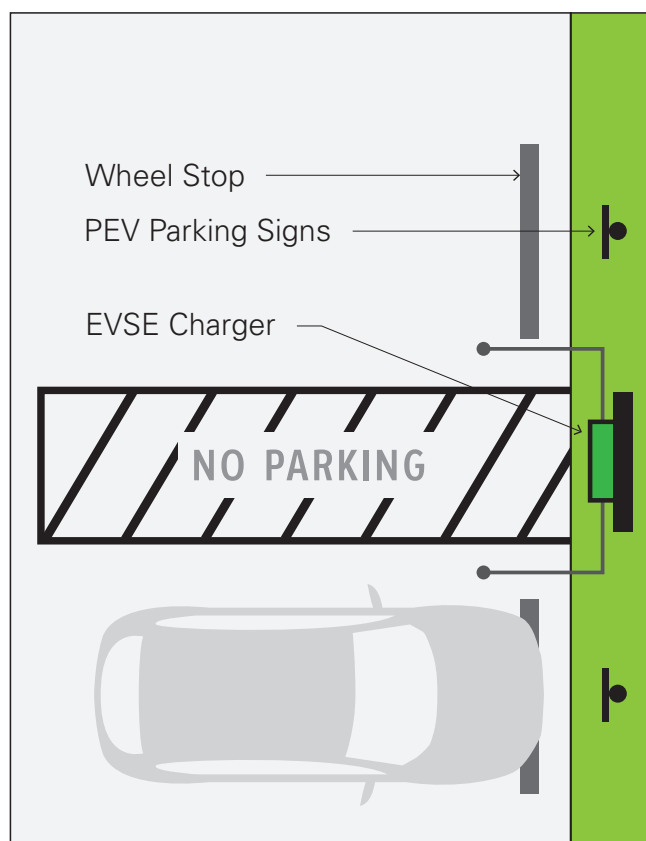


Public/Around Town Charging

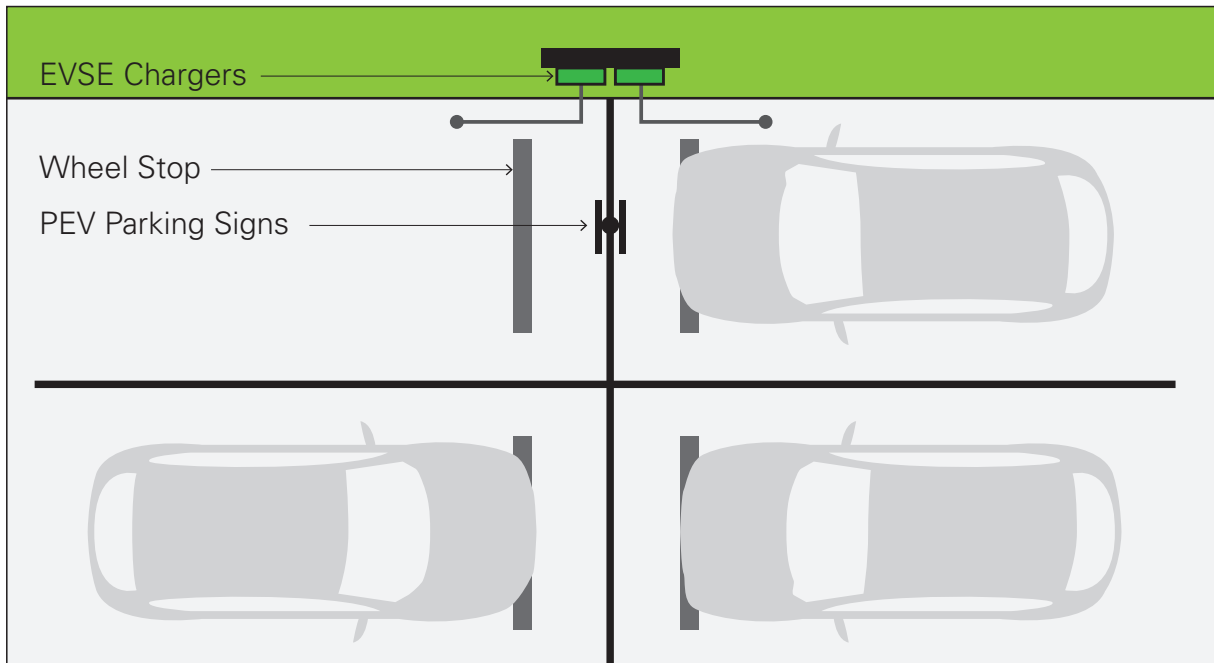
Diagrams of parking configurations with ports/cars.



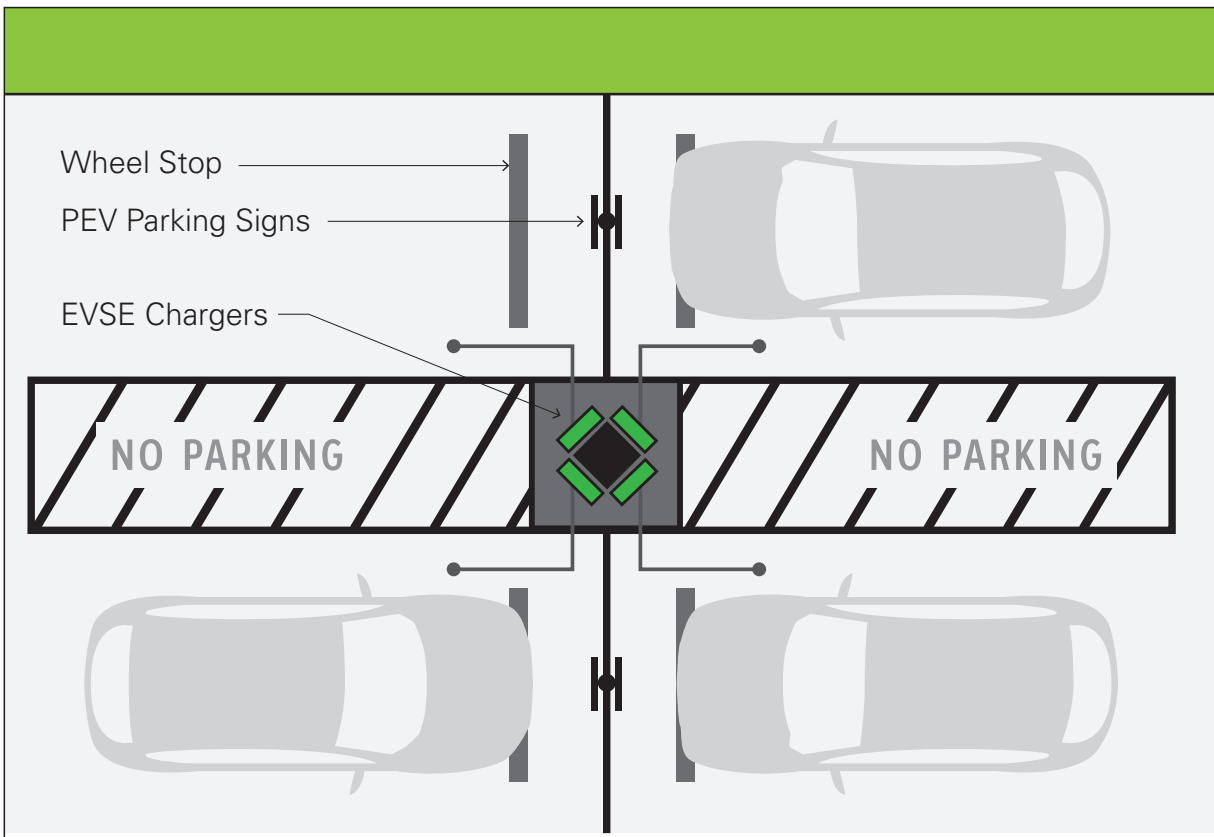
Example Wall-Mounted EVSE Configuration



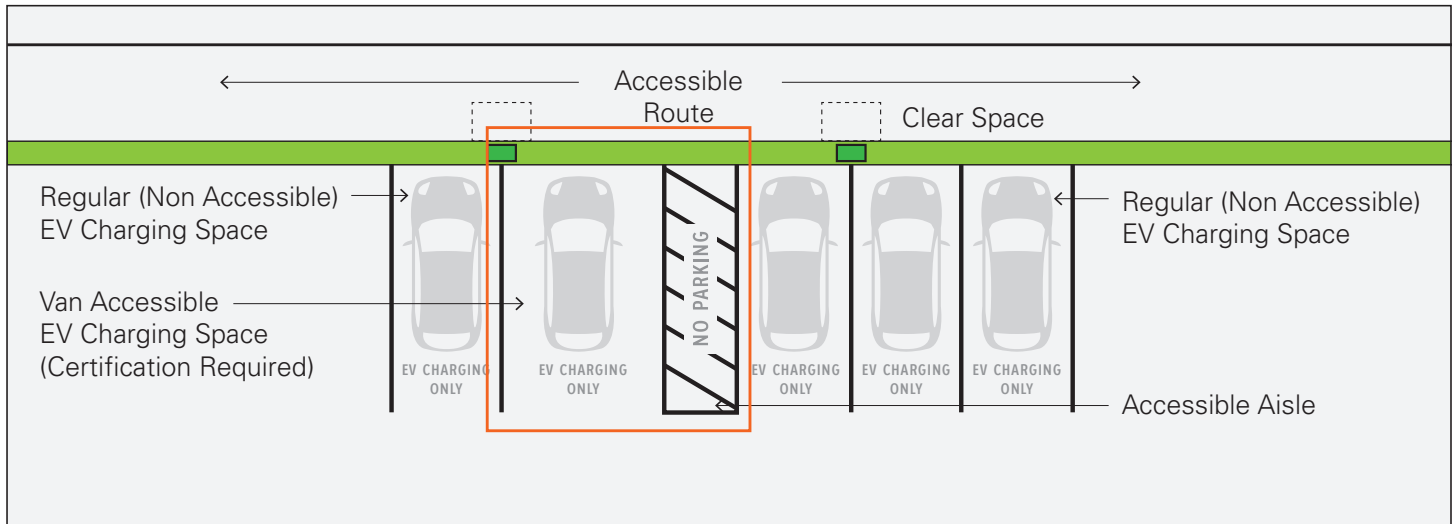
Example Single Unit Dual Port EVSE Configuration



Example Dual Unit EVSE Configuration



Example Multi-port EVSE Configuration



Example ADA Accessible EVSE Configuration

'Smart' or Basic Charging?

A key factor when planning to install EVSE is to determine if smart or basic EVSE will best fit your needs. The distinction between smart and basic systems is the ability to actively control the charging stations, collect charging information to get insights about utilization, and charge fees. This can include monitoring time and electricity use for the unit overall or a single charge session to determine peak usage, the ability to modulate the output of electricity provided to the unit during peak times and track users. A smart system connects to Wi-Fi or other available platforms like LTE wireless to share the information - thus a "smart" network.

Alternatively, a basic charger does not allow for user payments, capture and report out information on usage, or provide the owner control over the output of the unit beyond on and off. Basic charging is the simplest and least expensive option, however, provides the same charging capability as a smart charger without all the additional features.

While the initial cost can be higher than using a basic system, smart charging provides many benefits. For some organizations making the choice to utilize a smart charging system will make the most sense, especially when managing a fleet of all electric vehicles.

If you are unsure if networked equipment is necessary, consider choosing equipment with the Open Charge Port Protocol which will allow the station to be more easily and cost-effectively upgraded if needed/desired.

Payment Options

While offering access to free charging may be beneficial in particular settings, it is not practical in all instances. Most operators of public-facing DC fast chargers do offer this as a paid service. Smart systems enable the operator to collect fees via the network - several payment models are available including providing a monthly subscription service or structuring payment by use. By use payment structures offer flexibility to accommodate peak rates, total usage rates, and more. Depending on the network provider, payment structures may be customized. In addition to various payment structures, there are several ways to collect payment from users as well. Some models feature credit card readers for payment, others use smart phone enabled apps or RFID cards to enable the charging station. There are various costs associated with offering these options which will be discussed later in this guide.



EXAMPLE:

A retail center may choose to offer the first hour of charging free to customers. Every hour thereafter will be charged by kWh.

Monitoring and Reporting

Smart charging stations optimize the charging infrastructure by allowing the operator to manage the use of electricity. Smart chargers can also generate reports to help site hosts better understand demand which in turn can help them plan for future capacity, avoid peak demand charges that can cause higher electric bills, and design policies to better balance station usage. The ability to monitor and in turn regulate the system is a top consideration when determining which type of EVSE to install. Many businesses may find this data useful in determining how long people are using the chargers and can also help determine if there are certain times/days which are prime use hours. This can also be helpful when planning future expansion with more EVSE.

Visit AmerenMissouri.com/EV to connect with providers, through Ameren Missouri's EV Partner Network, that can assist with determining the right EVSE to fit your needs.

Considerations

There are many important considerations to take into account when determining if an EVSE installation is right for your organization and then, if so, how to plan for the project.

Location

When evaluating available parking, the ideal location to install EV charging is near existing electrical infrastructure to reduce installation costs. The farther away chargers are installed from this infrastructure the more complicated the installation process and, ultimately, the higher the costs. During initial construction is an ideal time to run conduit under parking areas to remote spaces to enable future EVSE installs. When installing conduit it is recommended to plan for additional spaces to be electrified in the future as many more EVs are expected on the roads in the years to come.

Convenience

Keep in mind that you'll want to locate the chargers in a convenient location with easy access to walkways and buildings if possible. Many operators choose to locate EV charging in optimal parking locations to raise awareness and encourage use of the chargers. If the chargers are difficult to access or burden the driver unnecessarily, they may choose not to charge. Locating chargers near prime parking locations can also help to encourage people to drive EVs. Another consideration would be the length of cables for the charging connector. Different EVs locate their charge ports in different locations so longer cables are recommended to not require vehicles to park a certain direction. Longer cables also allow EVs in two different parking rows to share the cable, when appropriate, to allow more access to the same station.

Driver Safety

Employee, tenant, and customer safety should be a top priority when designing your installation. The chosen area should be well lit to allow drivers to easily read all signs and instructions. Most charging stations are fully outdoor rated and safe to be used outside in the elements however it is recommended to verify this for your selected model. If a lot of chargers will be located along the same parking row it may be good to use cable management to keep cables up off the ground and help to mitigate any tripping hazards. Cable management will be covered below.

Mounting Type

Different configurations are available for mounting chargers, depending on your needs and available space. Wall mounts and pedestals are common options to consider when trying to choose the right equipment for your available space. In parking lots, typically pedestal mount chargers are used and for parking garages, wall mount chargers help to simplify installation. There are several other mounting styles as shown below:



Example Pedestal



Example Wall Mount

Internet Connection

Check the chosen chargers to see if they need Ethernet, Wi-Fi, or LTE wireless access to handle certain functions, including basic operation, usage data, or collecting payments. Keep this in mind as the installation process moves forward. Many chargers are capable of several connection types to make this process simpler for the user. Verify that the location chosen has the appropriate communications signal access, as appropriate, as some parking areas may be too distant from Wi-Fi to connect to the chargers.

Protecting Chargers

Curbs, wheel stops, bollards, and other mounting methods can be used to protect the charging equipment from potential collisions with cars.



Example Wheel Stop



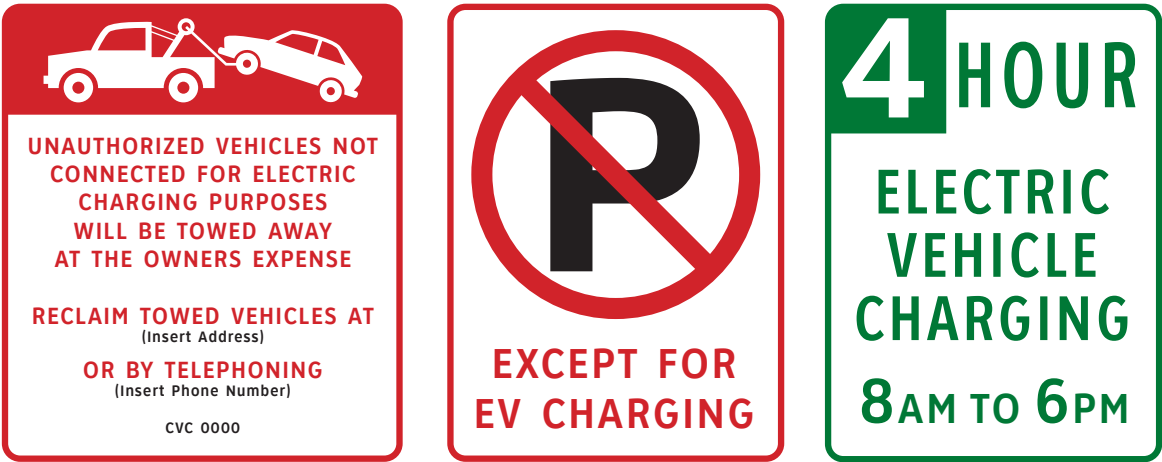
Example Bollards

Aesthetics

If the aesthetics of the charging infrastructure is important, consider how it fits into the existing landscape. Screens or walls can be used to keep the chargers from public view. Additionally, if desired, many chargers can be branded using company logos or other graphics to customize aesthetics.

Signage and Marking

Call attention to all charging stations clearly with visible signs over the parking areas. Standard “EV Charging Only” signs are available through most signage companies that offer common road and parking signs. Also, consider adding clear markings on the ground to indicate the area is reserved for charging. It is recommended to paint the entire parking space if possible a bright green to highlight the spaces are reserved for EV charging.



Example Signage



Example Markings



Accessibility

While there is not yet the widespread application of the Americans with Disabilities Act (ADA) compliance requirements in Missouri, your organization or community may want to consider this. If so, ensure charging infrastructure complies with the ADA and other applicable local accessibility requirements. Considerations include the height of the curb, connectors, or providing accessible charging spaces. For these types of spaces wheel stops and curbs are not recommended so that users can easily access the charger from all sides. Bollards can be used to protect the charger from vehicles when they are parking.

Potential for Growth

When planning the installation location, consider how needs might increase as electric vehicles become more popular. A key question to consider is if you will want to add more charging capacity in the future. Planning for increased need from the start will help to save costs on design and construction for the longer term for items such as running conduit or adding electrical capacity for future EVSE installs.

Cable Management

Charging equipment comes with cords and keeping them organized and neat is important for the safety of the users and overall maintenance of the equipment and surrounding landscape. Many charging cords are loose, requiring the user to wrap the cord around a holder after each use. While this is simple and low cost, it can result in cables being left on the ground and subject them to unnecessary wear and cause an obstacle for landscape care. Planning for cable management is an important step when choosing the correct EVSE. Many charging stations are designed with cable management functions to ensure that cables are properly put away after each use as well as kept up off the ground during use. Options include pole or wall-mounted cable management reels as well as overhead cord management built into the charger.



Example Cable Management

Benefits of Offering Charging

Installing EV charging stations can provide an important benefit to your customers, employees, and community while helping establish your leadership in sustainability and innovation. Fleet operators can save on the total cost of vehicle ownership through fuel and maintenance savings while reducing emissions. Workplaces and businesses can provide vehicle charging options to employees and/or customers as an incentive while enhancing employee and customer recruitment and retention efforts, among other benefits.

	 Workplace	 Fleet	 Multi-Family Dwelling	 Public Locations
Attract and retain top talent				
Attract new and repeat customers				
Create an advantage over your competitors				
Increase employee satisfaction and productivity				
Increase customer satisfaction and shopping dwell time				
Potentially add a new revenue stream				
Potentially increase rent and occupancy rate				
Potentially Increase Property Value				

Associated Costs

When considering an EV charging installation, there are a few cost areas to take into consideration. Equipment, installation, network, maintenance, and energy use are all costs to factor into the overall budget. There are, however, several ways to lower costs, including incentives offered by Ameren Missouri* as well as a federal tax incentive.

Equipment

The first consideration is the charging equipment itself - the cost of EVSE varies by brand, number of charging port connectors, networking capabilities, and more. When selecting the right equipment for your building, consider the features you most need or desire, and that fit your budget. For example, many higher end units feature data collection and require networking which will also add to overall cost considerations. Other questions to consider include:

- Do you need theft deterrent features?
- How many changing port connectors do you need?
- Do you wish to collect data?
- Would you like the ability to remotely manage the units?
- Is cable management preferred at your location?

Summary Table

Level 1	Level 2	DC fast charging
\$300 (wall mounted) – \$1,500 (pedestal unit)	\$400 (non-networked) – \$7,200 (smart)	\$10,000 – \$40,000+

For more detailed EVSE pricing information, please refer to the Ameren Missouri EV Partner Network. Our partners will be happy to help identify the correct EVSE for you and provide a quote.

*Incentives offered by Ameren Missouri are available to current Ameren Missouri business customers.

Installation

Installation costs can vary widely and are dependent on what electrical infrastructure exists, what upgrades are required, and local fees and permits. A few ways to reduce installation costs include choosing an installation location with existing electrical access, pairing the project with other needed construction, or installing multiple units. Locating new charging installations as close to existing electrical service as possible, when practical, will help to keep conduit and cable runs shorter. Also, selecting the proper mounting type of EVSE can help to reduce costs. For example, consider a wall mount unit in a parking garage or mounted to the side of a building near parking so that concrete work is not required when installing the units. If pedestal mount chargers are preferred however, perhaps pair installation with routine parking lot resurfacing so that boring or trenching costs can be minimized.

Installation Cost Considerations

- Concrete Work
- Electric Panel Work/Requirements
- Trenching
- Boring
- Running Conduit/Expanding Service Reach
- Permitting
- Signage and Markings

Internet Connection

If you have chosen networked or “smart” chargers, establishing a network connection may be an additional cost consideration. Beyond the network connection cost, depending on the vendor, there may also be an additional subscription charge for data collection and transmission. If you choose to collect payment at the chargers, there may also be fees associated with the transaction service. It is recommended to check with the supplier of the equipment to see what fees are required to operate the units when selecting a smart charger.

Maintenance

The type of warranty included with the charger varies by manufacturer and can range from a fixed-term to renewable. Level 1 chargers typically require little maintenance. Basic level 2 chargers typically require little to no maintenance. Level 2 units with additional features may require slightly more maintenance, however, they are frequently modular in design to allow parts to be easily interchanged. DC fast chargers require more regular maintenance as they have more complex systems which include cooling systems, filters, and other components.

Of course the more features the charger includes, the more likely it will be to require service. Additionally, EVSE units come with warranties depending on the manufacturer with some offering extended options as well as on-site maintenance for an additional cost. Cord and plug damage are the most frequently addressed maintenance items for EVSE. Replacing cords and plugs outside of warranty can cost from \$60 to \$300 depending on the unit. As with any asset, insurance is always recommended.

Energy Use

The electricity cost associated with your stations will depend on two utilization factors - time of use and overall energy use. For example, during peak demand times the cost of electricity may be higher, depending on the type of utility rate - monitoring and regulating the flow of electricity to the station through a network can help reduce this cost. The needs of each location will differ based on expected utilization.

Incentives

Cost-saving incentives are available to entities willing to make charging infrastructure available at their locations. It is recommended that you seek pre-approval before beginning any installation activities.

Ameren Missouri Incentive

Ameren Missouri is offering incentives for businesses seeking to install EV charging stations at workplaces, multi-family dwellings, and publicly accessible locations. The program is open to all Ameren Missouri business customers and includes:

- Up to \$5,000 incentive per Level 2 port (40 Amp max);
- Up to \$20,000 incentive per DC fast charging port (50kW nominal max); and
- A maximum incentive totaling 50% of the total project cost.

For more information visit AmerenMissouri.com/EV.

Federal

Businesses who purchase and install qualifying charging infrastructure before December 31, 2020 are eligible to receive a tax credit of 30% of the cost up to \$30,000 under the Alternative Fuel Infrastructure Tax Credit. The credit is available on both the cost of the equipment and the installation costs, though, does not include permitting and inspection fees. More information can be found on the Department of Energy website.

Checklist

Goals and Scope



Identifying clear goals that will help define a project scope is the most important step in the process. Clear goals and well-defined scope will simplify decision-making as you perform subsequent steps, including research into equipment options, investigating your facility's unique attributes, and speak with EVSE experts that will help your project succeed.

Internal Buy-In



To ensure the success of the charging installation, it's important to identify a project champion who can lead the way and help the team advance the project through each step. A few options include facilities personnel, sustainability representative, or an EV driver/sustainability enthusiast. The project champion(s) should have adequate time to dedicate to the design, planning, and facilitation of the installation.

Budget and Timeline



After identifying goals and scope and establishing the project champion(s), defining the budget and timeline for your installation project is an important step that includes examining the associated costs, conducting research, and obtaining quotes. A detailed project plan including a projected timeline is necessary to ensure success for larger installations. Many contractors can also support this effort to ensure the overall project is successful. Having concise benchmarks in order to achieve goals is a smart way to help ensure the success of the project.

Incentives



Determining what incentives are available to you will help stretch your budget and fulfill or expand the scope. Applying for incentives early will help keep the installation timeline on track.

Installation Contractor



A trustworthy contractor with experience in installing charging infrastructure will be a key member of the team. Visit AmerenMissouri.com/EV to connect with contractors, through Ameren Missouri's EV Partner Network, that can assist with installing and selecting the right EVSE for your needs.

Project Design

Power Assessment

Installations are most cost-effective when placed near an existing power source. A power assessment can help identify the most advantageous locations for the installation. Conducting an audit of your site's energy usage and available power sources early on in the process will ensure only viable locations are considered and help you identify the type of equipment best suited to your location.

Location

This step requires an assessment of available spaces, power sources, safety and much more. Throughout the process it will be important to consult with facilities managers, security, and other individuals with a vested interest.

Equipment

At this step you will determine the type of equipment to be installed. This includes:

- Smart or Basic Charging? You likely need smart charging equipment if:
 - You want users to pay a fee through the station;*
 - You want to restrict charging to only specific users;*
 - You want to get data on how the chargers are being used; and*
 - You want to control charging to avoid utility peak demand charges.*
- Single or dual connector?
- Cable management? Manual or mechanical assist?

Permitting

Most installations require permits for various aspects of the installation project. Start this process by conducting research and contacting your local permitting office or inquire with your chosen electrical contractor or service provider.

EV Charging Policy

Organizations offering workplace charging can benefit from setting clear guidelines regarding usage and sharing to help ensure a safe and successful charging experience for all. To develop a charging policy, consider engaging the intended users - for example through a survey - in the effort to fully understand their charging needs. When the time comes to develop a policy, an [example of a workplace charging policy \(PDF\)](#) by the U.S. Department of Energy can help you get started.

Promotion

Once you have installed your charging stations, engage with targeted users on how they can take advantage of this benefit. Promoting your charging infrastructure will help make the intended user aware of the offering and provide an opportunity to highlight your company's efforts. Promotional opportunities include a ribbon-cutting/unveiling ceremony, hosting an EV test drive event, educational sessions, and registering on charging station apps if they are publicly available. In addition, internal company communications such as intranet or all company mailing or virtual signs are a great way to promote the amenity of charging stations to employees.

Conclusion

Here at Ameren Missouri, we understand the intricacies an EVSE installation poses to your organization and are here to support your goals and serve as your EV resource. As the demand for charging continues to increase across the region, Ameren Missouri is here to help ensure you are prepared when your community begins asking to charge their cars at your location.

For more information about vehicles, fleet options, incentives, and additional resources visit us at AmerenMissouri.com/EV

You can also ask our experts any questions relating to installing charging stations by sending an email to EVMissouri@ameren.com.

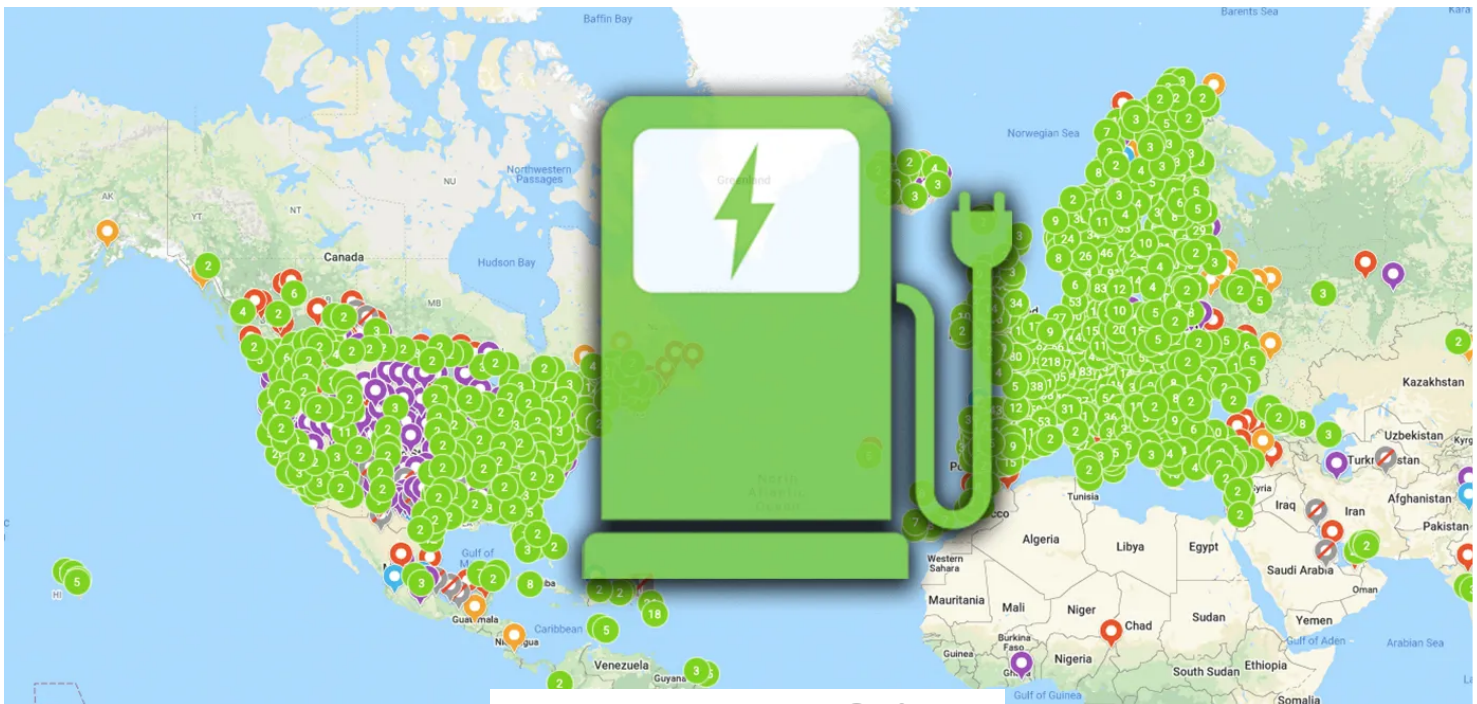
Additional Resources

1. [Electric Vehicle Charging for Multi-Unit Dwellings](#)
2. [Alternative Fuels Data Center Workplace Charging](#)
3. [Lynda.com Case Study](#)

OCTOBER 22, 2021

Electric vehicle (EV) charging standards and how they differ

Scooter Doll - Oct. 22nd 2021 4:00 am PT [🐦 @SCOOTERDOLL](#)



11 Comments



As more and more consumers make the green decision to forego their combustion engines for electric vehicles, they may not be as in tune with **charging standards**. kW, voltage, and amps might sound like jargon compared to miles per gallon, but these are essential units to understand to get the most efficiency out of your shiny new EV.

Table of contents

- Key charging terms to understand
- Electric vehicle charging level standards
 - Level 1 – 120V chargers
 - Charge Level 2 – 240V
 - Level 3 – DC rapid/fast/Superchargers
- Electric vehicle charging standards for connectors
 - SAE J1772
 - CHAdeMO
 - CCS
 - Tesla Supercharger
- ISO 15118 / Plug and Charge
- Resources for finding a charger

Key charging terms to understand

Before we get into the charging standards for electric vehicles, you must be sure you understand some of the terminology you never came across with your ICE car.

The transition to electric energy output rather than combustion brings a new slew of units and the dreaded use of math (we know). Here are some key terms you will come across daily, so be sure to study up.

- **Ampere (Amp)** – A unit of measurement for electrical current.
- **Connector / Cord set** – A device attached a cable that connects to an EV allowing it to charge.

- **kWh (kilowatt-hours)** – A unit of energy marking the energy transferred in one hour by one kilowatt of power. EV battery capacity is measured in kWh, so think of it as your vehicle's gallons of gas in its tank.
- **Time of use (TOU)** – A method of measuring and charging your energy consumption based on when the energy is used. Utility companies charge more at peak times of day when electricity use is higher.
- **Volts** – Units of measurement for the push that causes electrical charges to move in a wire.



Electric vehicle charging level standards

As the EV world currently operates, there are three levels to charging your vehicle based on varying speed and power. The tier system starts with the lowest charging at Level 1 and gets faster from there.

These levels are important to understand as they each offer pros and cons. Furthermore, each will be preferential at some point given your driving circumstances on a given day.

Level 1 – 120V chargers

Think of Level 1 as a universal charging option. If there is a wall socket nearby, you will be able to charge your EV without issue. A 120V socket and 15 amps remains the standard electrical outlet in North

Still following? Either way, it shouldn't be too tough to [find a plug in any home or garage](#), which is nice.

Download The Whitepaper

Learn more about CrowdStrike's strong cloud-native endpoint protection platform.

CrowdStrike®

Open

With that said, 110-120V is the bare minimum amount of juice you can pull into your EV. As a result, recharge times trickle at a rate of 3 to 5 miles of range per hour, based on the 1.4 kW power the average 120V wall socket supplies at 12 amps. So if the battery capacity of your 2021 Mustang Mach-E is 88kWh, you're looking at days to charge, not hours. Nearly 63 hours by our count.

saw this at a buddies apartment... gave me a good laugh



r/electricvehicles • bryologyy • 1y ago

109 points • 56 comments

Level 2 charging is quicker, almost as if the voltage is doubled! These chargers are the most common type found at public charging stations. 220-240V plugs usually offer around 40 amps and are usually more specifically placed in homes. Think of this charger as the equivalent to your dryer or other large appliances.

Many EV automakers suggest owners install a Level 2 charger in their home or garage if they can. This is generally fairly easy for an electrician or specialist to come and install. Especially since most homes in North America **receive power at 240V anyway**.

So if you're boasting around 7.7 kW max power at 240V, you can charge that **Mustang Mach-E** significantly quicker. 11.5 hours sounds a lot better than 63 hours, no?



Level 3 – DC rapid/fast/Superchargers

The name may vary, but the process is the same. For the sake of explanation, let's refer to them as **DC fast chargers** (DCFCs). These Level 3 chargers abandon the alternating current (AC) methods above to mainline power directly from the grid. While they require a lot more power (480+ volts and 100+ amps), their output is truly "super."

DC fast chargers can offer 50-350 kW of power; some in Europe are even reaching 400 kW. Depending on the power available, a Level 3 charger can fully replenish your EV in twenty to thirty minutes. This type of charging is **ideal for roadside stops, or retail** where you may not be parked for too long or need to get back on the road.

Download The Whitepaper

Learn more about CrowdStrike's strong cloud-native endpoint protection platform.

CrowdStrike®

Open

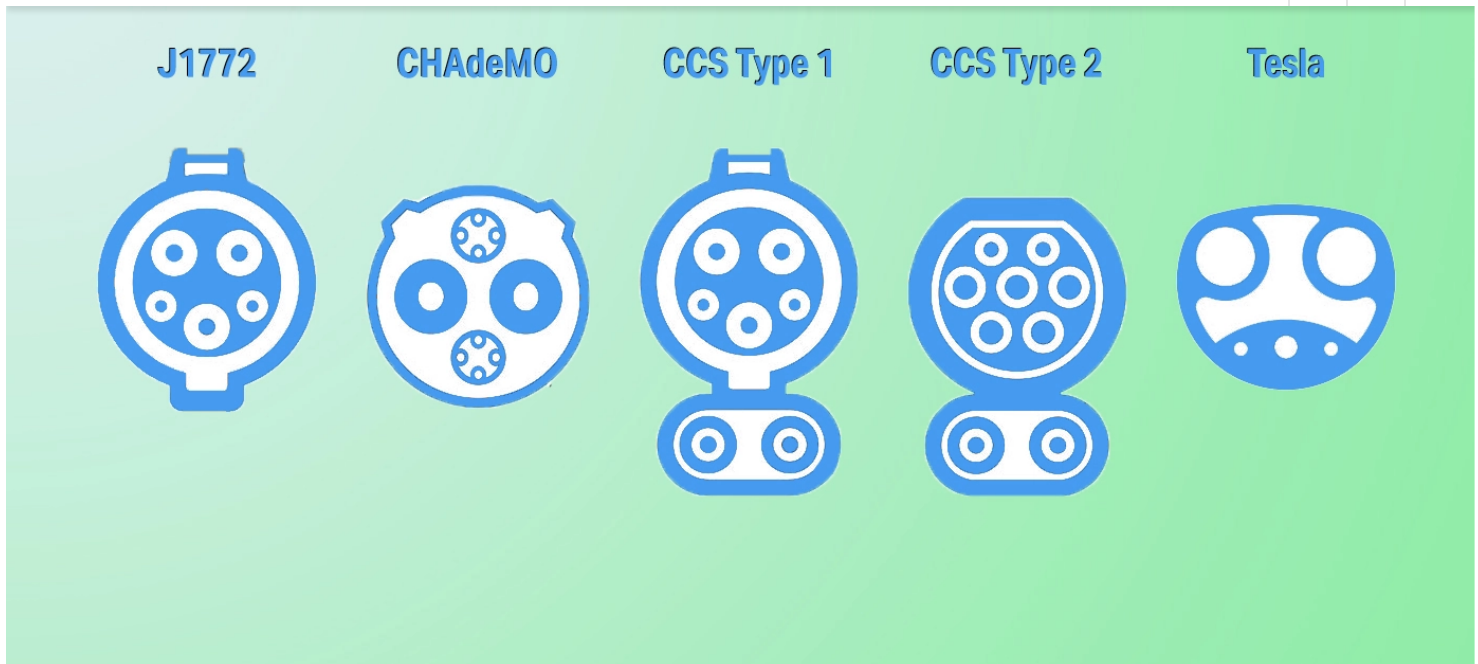
Hyundai's **Ioniq 5 charged from 22% to 80% in just 16 minutes**, so these fast charge numbers grow quicker by the day. It's important to note that not all EVs are currently equipped for DC fast charging, although most all new EVs hitting roads do.

If that is the case for you, there are plenty of public charging stations that offer Level 2 power.



Electric vehicle charging standards for connectors

Now that we've covered the levels you can choose from when charging, we will focus on the equipment you may encounter. These charging connectors **vary by electric vehicle** and are separated into two categories – The standard Level 1 and Level 2 connector, and DC fast charging connectors. Here's how they differ.



SAE J1772

This connector is the industry standard for all electric vehicles performing **Level 1 or Level 2 charging**. Whether it's the cord provided with the purchase of your EV or the Level 2 charger outside of Whole Foods, the J1772 is going to connect.

CHAdeMO

This is the first of three types of connectors currently present on EVs and first introduced. Originally it was implemented to be the industry standard, developed through the collaboration of five different Japanese automakers.

As a result, the CHAdeMO connector remains affluent in Japan and on EVs from Japanese manufacturers. **This includes automakers such as Toyota**, Mitsubishi, Subaru, and Nissan.

CCS

Shortly after the CHAdeMO was introduced, a second connector called the Combined Charging System (CCS) was implemented as an additional charging standard.

Where CCS connectors differ from CHAdeMO, is that they allow for AC/DC charging on the same port. CHAdeMO-equipped EVs require an additional J1772 connector cord to achieve Level 1 or 2 charging.

This connector is the preferred mode of charging amongst [European and American automakers](#), including BMW, Ford, Jaguar, GM, Polestar, Volkswagen, and even Tesla. Additionally, CCS is will be present on [the upcoming Rivian EVs](#).

Tesla Supercharger

From day one, Tesla has chosen to pave its own way in the EV industry, and that is no different with its Supercharger connector. This proprietary connector exists on all Tesla models in North America, although it does offer CHAdeMO and CCS adapter for certain markets.

For example, its Model 3 was built with a CCS connector for Europe. Furthermore, older [European Teslas were retrofitted](#) with adapters to support the existing connector plus the standard CCS type 2. This helped Tesla owners utilize the growing charger network overseas.

Even after [testing the connector adapter in the Korean market](#) last December, Tesla has yet to bring it to North American drivers. Last month, however, [EVgo announced it would be bringing Tesla compatible connectors](#) to over 600 of its US charging stations. Regardless of the other connectors and their compatibility, [Tesla's Supercharger network](#) already features over 20,000 charging stalls at over 2,100 stations around the world.

Most recently, Tesla CEO Elon Musk has shared that the American automaker [will begin sharing its EV network with other EVs](#) later in 2021.

For more detailed information, check out our [Tesla Supercharger guide](#).

ISO 15118 / Plug and Charge

Regardless of whether you're on an AC or DC charger offering any of the connectors above, it's important to learn about ISO 15118 and the "Plug and Charge" capabilities currently being offered by more and more EV automakers.

ISO 15118 is a **Vehicle to Grid (V2G)** communication interface that allows for bi-directional charging/discharging of electric vehicles. One of the main features that utilizes this standard interface is Plug and Charge.

Essentially, the Plug and Charge protocol communicates with any charging station you plug into and relays what kind of EV you're plugging in, seamlessly billing the driver. In this sense, the only action required by drivers is to plug the charging cable into their EV.

As a result, Plug and Charge eliminates the need for various swipe cards, fobs, or phone apps required by different charging networks you might face on a given route.

Tesla has been offering this Plug and Charge technology for about a decade now, but other EVs like the Mustang Mach-E, the Lucid Air, and the Porsche Taycan support technology as a standard feature.

Resources for finding a charger

So you know what level you're planning to charge at, and you've identified your proper connector. Now you're out all day running errands, and you need to find a spot to recharge. Where to begin?

Luckily there is a **vast library of public charging maps** for you to utilize, usually in app form. If you're not driving this very second, the touchscreen in your EV can probably help direct you too.

If not, here are some other resources to check out:

- [Alternative Fuels Data Center \(AFDC\)](#)



Summary of Best Practices in Electric Vehicle Ordinances

BY CLAIRE COOKE AND BRIAN ROSS

JUNE 2019



Attachment: Readings for Work Session 10.3.22 (EV Charging Station Requirements Work Session)

This ordinance guide was developed based upon funding from the Alliance for Sustainable Energy, LLC, Managing and Operating Contractor for the National Renewable Energy Laboratory for the US Department of Energy.

Contents

Overview	4
Electric Vehicle Charging Stations as Permitted Land Uses	6
Electric Vehicle Make-Ready Standards	7
Electric Vehicle Supply Equipment Standards	9
Electric Vehicle Parking Space Design and Location	11
Required EV Parking Capacity & Minimum Parking Requirements.....	13
Electric Vehicle-Designed Parking Use Standards and Protections.....	17
Signage, Safety, and Other Standards.....	19
Definition of Terms	22

Overview

This document is a summary guide to electric vehicle (EV) and electric vehicle supply equipment (EVSE) ordinances in the US.¹ The guide is sorted into best practice categories and provides a summary of typical provisions used by cities for each category. Each category includes a table with key points and text examples from actual ordinances, as well as recommendations from model codes for that topic, drawn from one of several model ordinances, or ordinance guidance documents that have been developed to inform cities on developing EV-ready zoning standards.

This summary is provided as a reference to cities seeking to develop EV zoning standards or development regulations. The summary does not address building or electric codes, only zoning ordinance language and associated tools. The examples are not intended to constitute recommendations, but rather to show the breadth of choices made by communities across the nation to integrate EVSE into development regulation.

The ordinance language in the following tables are drawn from the zoning ordinances of the following cities. To see the full context of each example, click on the links below and use the search function within the ordinance document to find the relevant example.

- [Atlanta, GA](#)
- [Auburn Hills, MI](#)
- [Chelan, WA](#)
- [Des Moines, WA](#)
- [Douglas County, WA](#)
- [Duluth, MN](#)
- [Golden Valley, MN](#)
- [Howard County, MD](#)
- [Indianapolis, IN](#)
- [Kansas City, MO](#)
- [Methuen, MA](#)
- [Middletown, CT](#)
- [Montgomery County, MD](#)
- [Mountlake Terrace, WA](#)
- [New Orleans, LA](#)
- [Saint Paul, MN](#)
- [Salt Lake City, UT](#)
- [St. Louis Park, MN](#)

The inventory of adopted ordinances also included a scan of model zoning ordinances and ordinance guidance documents for how local governments can use their zoning codes to help electrify transportation.

¹ This is not a complete inventory but rather a representative sample of ordinances from cities throughout the United States.

The guides and model ordinances are listed below, with links, along with their region of origin:

- Europe: [Electric Vehicle Charging Infrastructure: Guidelines for Cities](#)
- Georgia: [Model Municipal Ordinance](#) (click on the first hyperlink in Section II, A)
- Iowa: [Leading the Charge: City Codes and Electric Vehicles](#)
- Midwest: [Principles for EV-Ready Communities](#)
- New Jersey: [Alternative Fuel Vehicle Readiness: A Guidebook for Municipalities](#)
- New York: [Literature Review Summary: Electric Vehicle Supply Equipment Signage Guidance](#)
- New York: [Promoting Electric Vehicle Charging Station Installations](#)
- Northeast/Mid-Atlantic: [Creating EV-Ready Towns and Cities: A Guide to Planning and Policy Tools](#)
- Santa Clara County, CA: [Plug-in Electric Vehicle Best Practices Compendium](#)
- Washington: [Electric Vehicle Infrastructure: A Guide for Local Governments in Washington State](#)
- Washington: [Plug-In Electric Vehicle Readiness Plan](#)

installed throughout the structure and subpanels sized to accommodate 60A or 40A breakers for each.”

Reasoning: “[if] at least 20% of stalls are “EV-Ready” ... the total electrical capacity is able to be shared among the remaining 80% of EV parking stalls using load sharing technology. However, this is only possible if the electrical conduit (trunk line) and subpanels are preinstalled throughout the parking garage to allow Level-2 Charging Equipment to be connected in the future.”

3. Electric Vehicle Supply Equipment Standards

Minimum standards or required design of charging equipment or charging station infrastructure. These standards are often combined with minimum requirements for EV charging installations (see best practice #5).

Typical Ordinance Includes	Language Example	
Specification:	City, State:	Text:
May require that EVSE meet standards found in the National Electric Code.	Atlanta, GA	“Installation of EVSE shall meet National Electric Code article 625...”
Often specifies that EVSE must be mounted. • May specify on what EVSE should be mounted. • Often specify at what height EVSE should be mounted. • Often specify that EVSE should be installed so as not to be a tripping hazard. • May require a retraction device or place to mount cords. • May specify that cords should not cross walkways.	Montgomery County, MD	“Battery charging station outlets and connector devices shall be no less than 36 inches and no higher than 48 inches from the surface where mounted.”
	Chelan, WA	“Equipment mounted on pedestals, lighting posts, bollards, or other devices for on-street charging station shall be designed and located as to not impede pedestrian travel or create trip hazards within the right-of-way”
	New Orleans, LA	“Cords shall be retractable or have a place to hang the connector and cord sufficiently above the pedestrian surface. Any cords connecting the charger to a vehicle shall be configured so that they do not cross a driveway, sidewalk, or passenger unloading area.”
May specify other standards that EVSE should comply with.	St. Louis Park, MN	“EVCS pedestals shall be designed to minimize potential damage by accidents,

- May specify that EVSE be installed in compliance with a specific state code. - Often specify that EVSE be installed in compliance with the Americans with Disabilities Act.		vandalism and to be safe for use in inclement weather.”
	St. Louis Park, MN	“Battery charging station outlets and connector devices shall be mounted to comply with state code and must comply with all relevant Americans with Disabilities Act (ADA) requirements.”
May specify the distance of the charging station from the curb.	Mountlake Terrace, WA	“Charging station equipment...shall be a minimum of 24 inches clear from the face of the curb.”
May specify under what circumstances a parking space must adhere to these standards.	Des Moines, WA	“Electric vehicle charging stations utilizing parking stalls located in parking lots, or parking garages shall comply with the following requirements...”
	Douglas County, WA	“Design criteria for electric vehicle charging stations or battery exchange stations within commercial, industrial and mixed-use zoning districts...”

EV Guide and Model Code Recommendations

Model Code Name:

Iowa Clean Cities Coalition, Leading the Charge: City Codes and Electric Vehicles

Recommendation: Design criteria should be created for EVSE installations.

Reasoning: “By articulating standards for EVSE design and installation, including setbacks and pedestal height for freestanding units, a community can facilitate a smooth construction permitting process.”

4. Electric Vehicle Parking Space Design and Location

Information related to EV parking space design and location. Design and location decisions will affect installation cost (length of conduit from electric source) and use (location of the space relative to the building).

Typical Ordinance Includes	Language Example	
Specification:	City, State:	Text:
May specify parking space size.	Atlanta, GA	“The installation of an EVSE should not reduce the electric vehicle charging station’s length to below the size and standards required under section 16-28.014”
	Methuen, MA	“Where provided, spaces should be standard size parking stalls but designed in a way that will discourage non-electric car vehicles from using them.”
	Montgomery County, MD	“The minimum width for a parking space for charging electric vehicles is 9 feet.”
May specify the location of parking spaces on a street or within a parking lot.	Atlanta, GA	“Criteria for electric vehicle parking and charging on private streets...For the purpose of reducing cable management issues and placing the...charging station closer to crosswalks and curb ramps, such charging stations shall be installed to use the last space on a block face in the direction of travel.”
	Methuen, MA	“Parking spaces for electric vehicles must not be located in the most convenient spots because this will encourage use by non-electric vehicles.”
	Salt Lake City, UT	“The electric vehicle parking space shall be located in the same lot as the principal use.”
	St. Louis Park, MN	“The EVCSs shall be located in desirable and convenient parking locations that will serve as an incentive for the use of electric vehicles.”
	St. Louis Park, MN	“General Requirements for Single-Family Residential Zoning Districts...EVSE shall be located in a garage, or on the exterior wall

		of the home or garage adjacent to a parking space.”
May provide specifications about parking space and location fit.	Methuen, MA	“Design should be appropriate to the location and use. Facilities should be able to be readily identified by electric cars users but blend into the surrounding landscape/architecture for compatibility with the character and use of the site.”
May require the parking space to have features that protect charging equipment.	Chelan, WA	“Equipment shall be protected by wheel stops or concrete filled bollards.”
	Montgomery County, MD	“Adequate battery charging station protection, such as concrete-filled steel bollards shall be used. Curbing may be used in lieu of bollards, if the battery charging station is setback a minimum of 24 inches from the face of the curb.”
May simply specify an entity with the authority to create standards for EV charging stations.	Des Moines, WA	“The city manager or designee is authorized to develop and maintain standards for the design and construction of electric vehicle charging stations.”

EV Guide and Model Code Recommendations

Model Code Document Name:

Plug-in Electric Vehicle Best Practices Compendium (County of Santa Clara, CA)

Recommendation: Information be given concerning “Parking configurations, including guidance on whether it is preferable to locate chargers in perpendicular, parallel, or angled parking spaces, and on the location of wheel stops, guard posts and signage.”

7. Signage, Safety, and Other Standards

Information related to signage, road markings, notifications, lighting, usage fees, and maintenance. Signage helps all drivers understand appropriate use of this new form of parking infrastructure, and other standards similarly attempt to protect or enhance the public value of the infrastructure and minimize risks.

Typical Ordinance Includes	Language Example	
Specification:	City, State:	Text:
Often includes signage and road marking requirements. May include photo examples of signage.	Atlanta, GA	"Way finding signs, if installed, shall be placed to effectively guide the motorists to the electric vehicle parking space and/or charging station. Private regulatory signage shall be placed in a manner that shall not interfere with any parking space, drive lane or exit."
	Douglas County, WA	"Each electric vehicle charging station shall be posted with signage indicating the space is only for electric vehicle charging purposes."
Often includes lighting requirements.	St. Louis Park, MN	"Site lighting shall be provided where an electric vehicle charging station is installed, unless charging is for daytime purposes only."
	Chelan, WA	"Lighting. Adequate site lighting shall be provided, which shall also comply with Chapter 17.62..."
Often includes information about charging usage fees.	Kansas City, MO	"Property owners are not restricted from collecting a service fee for the use of an electric vehicle charging station."
Often includes information about general operations and maintenance.	Atlanta, GA	"Electric vehicle charging stations and parking spaces for which any parking incentive was granted shall be operational at all times. When an electrical vehicle parking station is not operational for 14 consecutive days, it shall be considered to have been removed from service. The failure to maintain the number of electric vehicle charging stations and parking spaces shall be cause to require the

		installation of the number of parking spaces required by the district regulations.”
	Model Code – Electric Vehicle Infrastructure. Guide for Local Governments (Washington State)	“Charging station equipment shall be maintained in all respects, including the functioning of the charging equipment. A phone number or other contact information shall be provided on the charging station equipment for reporting when the equipment is not functioning, or other problems are encountered.”
	St. Louis Park, MN	“The EVCS must be operational during the normal business hours of the use(s) that it serves. EVCS may be de-energized or otherwise restricted after normal business hours of the use(s) it serves.”
Often includes requirements for contact information for instances where a charging station is damaged or out of order.	Atlanta, GA	“A phone number or other contact information shall be provided when the station is not functioning in a manner that allows electric vehicles to be charged.”
	St. Louis Park, MN	“A phone number or other contact information shall be provided on the equipment for reporting problems with the equipment or access to it.”
Often includes information about required notices.	Chelan, WA	“The following information shall be posted at all electric vehicle charging stations: 1. Voltage and amperage levels; 2. Hour of operations if time limits or tow-away provisions are to be enforced by the property owner; 3. Usage fees; 4. Safety information; 5. Contact information for reporting when the equipment is not operating or other problems.”
May include time limits and hours of operation.	Mountlake Terrace, WA	“Time limits may be placed on the number of hours that an electric vehicle is allowed to charge, prohibiting indefinite charging /parking. If applicable, warnings shall be posted to alert charging station users about

		hours of use and possible actions affecting electric vehicle charging stations that are not being used according to posted rules.”
	St. Louis Park, MN	“The EVCS must be operational during the normal business hours of the use(s) that it serves. EVCS may be de-energized or otherwise restricted after normal business hours of the use(s) it serves.”
May include information on landscaping requirements.	Atlanta, GA	“Minimum landscaping requirements for surface electric vehicle parking and charging station lots...(a) All parking shall be terminated with a landscape strip a minimum width of five feet and equal to the length of the parking bay. (b) All required landscaped areas shall be planted with evergreen groundcover or shrubs with a maximum mature height of 30 inches...”

EV Guide and Model Code Recommendations

Model Code Document Name:

Plug-in Electric Vehicle Best Practices Compendium (Santa Clara County)

Recommendation: “Local governments should ...consider reducing EVSE permitting costs ... by waiving or subsidizing the fees to residents and/or businesses.”

Action Items For EV-Ready Communities (NYSERDA)

Recommendation: “Simplify and streamline permit processes.”

Literature Review Summary: Electric Vehicle Supply Equipment Signage Guidance. (NYSERDA, Energetics, 2013)

Recommendation: All sign types should be considered when writing an EV ordinance. “There are three different types of signage applicable to EVSE: General Service or Guidance Signs, Regulatory or Enforceable Signs, and Special or Information/Tailblazer Signs.”



Planning for Electric Vehicle Charging Facilities



Adobe Stock.

THIS ARTICLE WAS ORIGINALLY PUBLISHED IN THE
NORTH DAKOTA PLANNING ASSOCIATION
NEWSLETTER.

*by Will Hutchings, City of Bismarck, North
Dakota*

In recent years it has been common to attend planning conferences and hear about advancements in automobile technology that are expected to occur within the foreseeable future. Ten years ago, these advancements may have sounded like something out of a science fiction novel but are now becoming reality and are expected to have a profound



Dakota, have been somewhat hesitant to expect these technologies to be commonplace anytime soon, but the truth is

these technologies have already emerged in our state.

One such technology is electric vehicles (EVs). Electric vehicles are already having impacts on transportation and land use planning in North Dakota. Nationwide, EV sales increased 29.1% between 2017 and 2018. The North Dakota Department of Transportation (NDDOT) is considering electric vehicle trends in planning efforts, and there are land use implications for local communities as well.

To better understand how EVs have public impact, it is necessary to have a basic understanding of how these vehicles are charged. There are three standardized levels of EV charging facilities used throughout the country (see inset). Most EVs sold in the United States utilize a standardized vehicle plug, although some EV automobile manufacturers utilize their own proprietary vehicle plugs and others utilize either a US or Asian plug for Level 3 charging. This means that there is not a one-size-fits-all for charging stations.



TYPES OF EV CHARGERS

Level 1 is considered slow charging and operates on a 15 to 20-amp breaker on a 120-volt AC circuit. This is comparable to the wall plug used for most common household appliances but has a special electric outlet for the car connection. These chargers are typically used at home by EV owners. Level 1 charging stations typically take 8 to 12 hours to fully charge.



Image Source:

<https://www.solarunitedneighbors.org/learn-the-issues/solar-and-electric-vehicles/electric-vehicle-charging-guide/>

Level 2 is considered medium charging and operates on a 40 to 100-amp breaker on a 208 or 240-volt AC circuit. The amount of energy this charger uses is



Image Source:

<https://www.westernplanner.org/2019articles/2019/4/10/planning-for-electric-vehicle-charging-facilities>



dryer. These [charging-guide/](#) chargers also feature a special electric outlet for the car connection. Level 2 chargers are used for both home or commercial service purposes and typically take 3 to 4 hours to fully charge.

Level 3 is considered fast or rapid charging and operates on a 60-amp or higher breaker on a 480-volt or higher three-phase circuit with special grounding equipment. Level 3 charges are also commonly known as DC Fast Charge. These chargers are typically characterized by industrial-grade car connection electric outlets that allow for faster recharging times of 30 to 45 minutes. Level 3 chargers are expensive to purchase and install the necessary utility infrastructure associated with them. Therefore, these chargers are used primarily for commercial charging stations and are not likely to be used for personal use.



Image Source:
<https://www.plugincars.com/ultimate-guide-electric-car-charging-networks-126530.html>



CONSIDERATIONS

For city and county planners it is important to consider appropriate locations for the placement of EV charging stations. For most, this task probably means looking at land-use classifications and making zoning interpretations. The most common knee-jerk interpretation may be to consider EV charging stations to be similar to gas stations which may have greater restrictions imposed on siting and location. However, in comparison of EV charging facilities and gas stations, the potential conflicts, nuisances and concerns for each are very different.

A great resource for local planners is the American Planning Association's Zoning Practice circular from July 2010 titled "Practice Electric Vehicle Infrastructure." This comprehensive circular, although somewhat outdated due to the rapid change occurring in EV technology, helps planners better understand the technology and planning considerations for these charging facilities.

The cities of Bismarck and Fargo have received notice of a proposed project to install a privately owned and managed proprietary EV fast charging facility in their communities. In addition, the same company is planning to install several more across the



Billings, Montana. For City of Bismarck planning staff, that meant looking at current zoning regulations and determining any conflicts that might exist. It also meant determining which zoning district each type of charging station should be allowed in. Research, consulting with peer communities, and reviewing land-use classifications proved integral to determining appropriate zoning districts for the placement of these facilities.

City of Bismarck planning staff determined Level 1 and Level 2 EV charging facilities pose low impacts and thus should be allowed in all zoning districts by right as an ancillary use. However, the more service-oriented nature of Level 3 charging stations led Bismarck to determine that these facilities would be best classified as a light service use and therefore should only be permitted in downtown, commercial, and industrial zoning districts.

Another consideration for EV charging stations are parking requirements and potential vehicle stacking. It may be good practice to co-locate these facilities with other service/commercial uses in private parking lots. Some EV charging facilities may want to sign their charging station stalls for use only for EV charging purposes.



parking specifically for EV charging purposes or allow co-location with other uses. At this time, due to the low level of electric vehicle ownership compared to gas-powered

vehicles, vehicle stacking is probably not a concern, but as the share of EVs on the road increases, this may be something for planners to monitor and amend zoning regulations to address in the future.

Some municipalities allow EV charging facilities in public locations either as a curbside charging facility or within parking spaces within public parking lots/garages. Providing curbside charging stations may be an economic incentive to bring more consumers to certain parts of town. Charging stations provided within parking garages are a natural fit, but each community must determine the best way to provide the service, whether it be complementary, provided as an additional fee, or privately managed. However, it also creates fairness concerns especially if the charging infrastructure is privately owned and conducting business within public right-of-way.

There are some safety concerns associated with EV charging equipment, specifically power cord trip hazards. In residential neighborhoods, in which most homes have a



When parking is often on street, the charging cord could create trip risks over sidewalks within the right-of-way. For charging facilities in private parking lots, parking garages, and

curbside (if a community chooses to allow this type of encroachment), design review should ensure that charging station cords are placed in locations that minimize trip hazards.

R A N G E

EV travel range is limited by current battery efficiency. Most of today's EVs can travel median distances of 114 miles with a low end of 58 miles and a max of 335 miles, but this can be reduced by cold weather extremes. Although their travel range has increased 56% since 2011, and will continue to improve as battery technology advances, the need for strategically located charging facility infrastructure along travel corridors is paramount.

Short trips around town typically do not pose any range anxiety since EV owners can charge their vehicle overnight at home and easily complete most home-based trips (home to work, home to school, home to grocery) on a single charge. The challenge is when EV owners need more reliable charging station infrastructure for long-distance travel.

Whereas most gasoline vehicles can travel



being stranded without recharging capabilities in Jamestown. If your job requires that you travel long distances across this rural state, you would undoubtedly have range anxiety when purchasing an EV if the charging infrastructure is not available to safely make your trip.

STATEWIDE EFFORTS

In comparison to nationwide EV charging facility availability, North Dakota is lacking in the charging infrastructure needed to ensure regional and interstate travel. Several sites throughout the state do provide some basic charging facilities free of charge. Only one Level 3 charging facility exists in the state. The lack of Level 3 charging facilities means that a trip across the state could add an additional 12 to 24 hours just for recharging using only Level 1 or Level 2 chargers. This lack of Level 3 charging facilities means that regional and interstate EV owners will avoid travel within North Dakota, and that North Dakota residents who might consider purchasing an EV face a strong disincentive to do so. To illustrate the lack of EV charging infrastructure within North Dakota compared to the nation, check out this interactive crowd-sourced map (<https://pluginamerica.org/get-equipped/find-an-ev-charging-station/>).



the United States. There are two progressive designations for each alternative fuel type that a corridor can be designated: “Signage Pending” and “Signage Ready”. In 2018, NDDOT pursued designation of I-94 and I-29 as EV “Signage Pending.” This designation means that NDDOT will now develop a plan to make the corridors ready for the next designation. Once EV charging stations are in place at no greater than 50-mile increments, then NDDOT can pursue the “Signage Ready” designation.

The NDDOT is working with key energy, automotive industry, and government stakeholders to encourage the development of an electric vehicle coalition within the state. The purpose of the coalition would be to proactively identify a variety of issues related to electric vehicles including but not limited to electric fueling/charging stations.

LEGAL CONCERNS

North Dakota Century Code defines an electric public utility as “a privately-owned supplier of electricity offering to supply or supplying electricity to the general public” (NDCC 49-03-01.5). Jerry Lein, Public Utility Analyst for the North Dakota State Public Service Commission, notes that as currently written, this definition would also apply to any company that buys electricity from an



privately owned, publicly available EV charging station would be considered a public utility under the current legal definition and thus subject to all rules and regulations governing public utilities. There are ways this can be avoided, such as having publicly owned stations, if the electricity is provided directly from the power company to the end user, or if the electricity is provided at no charge. However, if EV charging stations become more common, state legislators may need to consider amending the definition of a public utility or consider exemptions for EV charging stations. In contrast, gasoline stations are not considered a public utility.

ECONOMIC BENEFITS

There are certainly economic benefits for communities that have EV charging facilities – specifically, in sales tax revenue captured locally from long-distance commuters. The length of time it takes to recharge an EV has been steadily reducing; however, even the most efficient Level 3 charging facilities take approximately 30-45 minutes to fully charge, compared to gas stations which take less than 5 minutes to refuel. The longer EV charging times means that charging stations located near commercial and service amenities will be more attractive to road-weary travelers. EV charging facilities



capture more sales tax revenue from regional and interstate EV travelers. In addition, communities with hotels that offer charging facilities for their guests have more

opportunity to capture hospitality tax compared to communities that do not.

Will Hutchings is a planner for the City of Bismarck and co-editor of the NDPA Newsletter.

Published in April 2019. Courtesy of North Dakota Planning Association



PREVIOUS

Downtown Las Vegas Form-Based Code: A Nevada First

NEXT

Meet Sid Fox, AICP - a Wyoming planner working on wind energy