

CITY OF NORMAN, OKLAHOMA

**CITY COUNCIL COMMUNITY PLANNING AND
TRANSPORTATION COMMITTEE AGENDA**

**Municipal Building Conference Room
201 West Gray**

Thursday, November 16, 2017

3:30 P.M.

- 1. CLEVELAND AREA RAPID TRANSIT (CART) RIDERSHIP REPORT INCLUDING SAFERIDE AND EXTENDED SERVICE FOR THE MONTH OF OCTOBER 2017.**
- 2. DISCUSSION REGARDING THE CREATION OF REGULATIONS FOR TINY HOUSES AND WEDDING VENUES.**
- 3. DISCUSSION REGARDING GREEN BUILDING CODE AND GREEN INFRAStructure/LOW IMPACT DEVELOPMENT INCENTIVES.**
- 4. MISCELLANEOUS PUBLIC COMMENTS.**

ITEM 1
CART REPORT

Community Planning & Transportation Committee Meeting, November 16th, 2017

CART Monthly Report for October 2017

CART – Ridership Report Summary

- CART transported 140,553 passengers in October – a 7% decrease over October 2016. October’s daily average ridership was 6,406, a decrease of 814 or 11%.
 - When analyzing the ridership more closely, route 40-Lloyd Noble Shuttle transported 78,787 in October, which is a 13,762 or 15% decrease over October 2016. The overall fixed route ridership for October increased by 2,457 or 4% when pulling out the route 40 ridership.
 - Routes 10-Main St and 21-Alameda E./Norman both showed a little over 1,000 increase in ridership in October compared to last year.
- Fiscal year to date ridership (July – October) is 399,673 – a decrease of 12% over the same period last year.
- There were 749 riders who traveled with bicycles (0.5%) and 293 with wheelchairs (0.2%). Route 11-Lindsey East carried the most passengers with bicycles (252) and wheelchairs (105).

CARTaccess – Ridership Report Summary

- CARTaccess transported 3,022 riders in October – a decrease of 5% or 155. Average daily ridership was 126, a decrease of 5% or 6. Primary zone ridership decreased by 310 or 11% in October; Secondary Zone ridership increased by 155 or 39%.
- For FY18 year to date (July to October), CARTaccess ridership is 11,652 – a decrease of 8%. Primary Zone ridership has decreased by 1,385 or 12% FYTD; Secondary Zone ridership has increased by 372 or 25%. Secondary Zone ridership comprises 16% of all CARTaccess trips FYTD.

CART Activities

- CART participated in the annual Oklahoma Transit Association (OTA) Bus Rodeo on October 18-20. There were three classes of obstacle courses and knowledge testing: minivan, cutaway, and city bus. CART driver Kevin Calvert placed first in the city bus portion and will represent Oklahoma at the national competition.
- OU was the host of the Campus Parking and Transportation Association (CPTA) national conference October 8-11. Sessions included construction of parking garages, smarter parking, and bike share. There were also windshield tours of the OU HSC and Norman campuses.
- CART staff participated in DHS training on October 27. CART has utilized funds from DHS in the past to purchase cutaway vehicles for CARTaccess.

Bus Stop Improvements

- CART staff are participating in the City of Norman’s ADA Steering Committee that is helping guide the development of the ADA Self Evaluation/Transition Plan. Bus stops and access to bus stops in the public right of way are to be included in the scope of this plan.

CART Detours/Construction

- Route 12-Lindsey West operators and passengers are still navigating the street widening project on Lindsey Street.
- Route 52-Campus Loop is missing its stop at the Oklahoma Memorial Student Union due to construction of a new engineering building on Felgar Street. Riders are encouraged to use stop 181 at Jenkins Avenue and Felgar Street.

CART Grant Activity

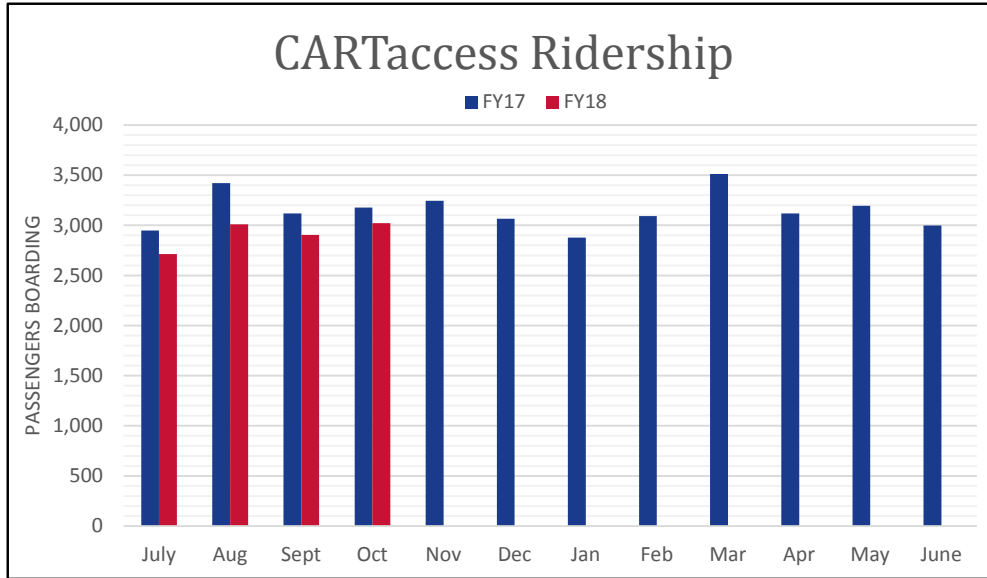
- CART will be applying for a Clean Air grant through ACOG for the cost difference of purchasing 2 CNG vehicles over diesel.
- CART staff completed the National Transit Database (NTD) annual report as required by FTA. NTD collects data and statistics from transit agencies across the nation and make the data available to the public. In addition, some of the statistics are involved in the urbanized formula grant funding for CART.

Attachments

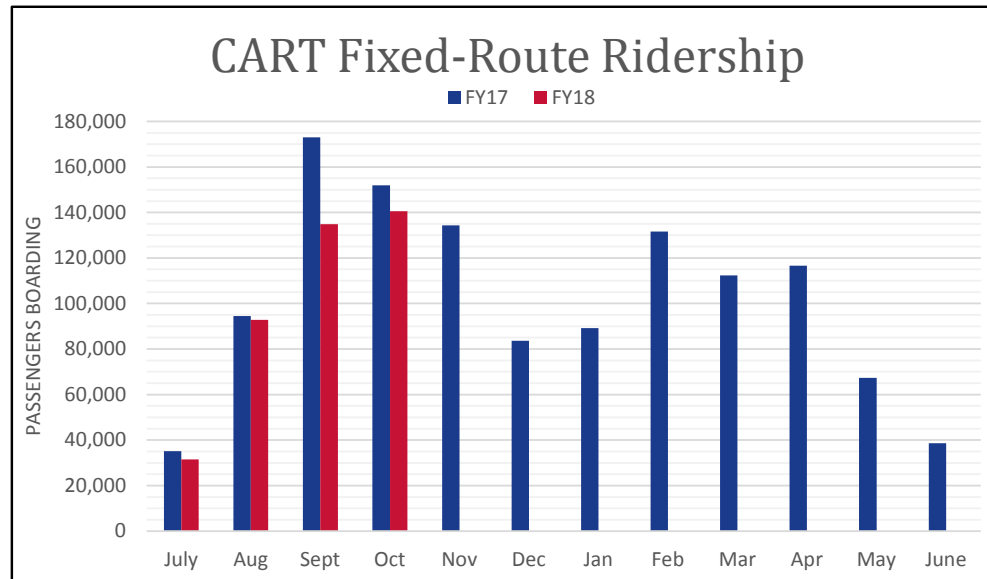
- CART fixed-route and CARTaccess ridership graphs for FY17 and FY18.

CART Ridership Summary

City of Norman Community Planning & Transportation Committee



CARTaccess Ridership by Month			
	FY17	FY18	Change
July	2,948	2,714	-8%
Aug	3,422	3,011	-12%
Sept	3,118	2,905	-7%
Oct	3,177	3,022	-5%
Nov	3,244		
Dec	3,065		
Jan	2,878		
Feb	3,092		
Mar	3,511		
Apr	3,118		
May	3,196		
June	2,997		
July - Oct	12,665	11,652	-8%
FY17 Total	37,766		



Fixed-Route Ridership by Month			
	FY17	FY18	Change
July	35,072	31,500	-10%
Aug	94,507	92,808	-2%
Sept	173,011	134,812	-22%
Oct	151,858	140,553	-7%
Nov	134,347		
Dec	83,667		
Jan	89,238		
Feb	131,650		
Mar	112,329		
Apr	116,616		
May	67,325		
June	38,645		
July - Oct	454,448	399,673	-12%
FY17 Total	1,228,265		

FY18: July 1, 2017 - June 30, 2018

FY17: July 1, 2016 - June 30, 2017

ITEM 2

TINY HOUSES AND WEDDING VENUES



office memorandum

TO: Community Planning and Transportation Committee Members

FROM: Susan Connors, AICP, Director, Planning and Community Development

DATE: November 9, 2017

RE: Draft Ordinances on Tiny Houses and Wedding Venues

At the August 24th Community Planning and Transportation Committee meeting, staff was directed to bring information to the Committee in September regarding Tiny Houses and Wedding Venues. In September the Committee discussed these topics and requested that staff prepare draft ordinance language for these uses.

The Committee made recommendations at their September meeting about the content for each use. Those comments have been incorporated into the draft language presented with this memo.

The Committee requested that the Tiny House language include the following primary elements:

1. Tiny Houses should be on foundations and should be considered the primary structure on a lot.
2. Tiny House Subdivisions/Parks can be developed with houses on wheels or without wheels through PUD zoning.
3. Tiny Houses allowed through a Special Use Permit. The Committee was not definite about zoning districts. Staff is recommending A-1, A-2 and RE zoning districts.
4. Tiny houses should be allowed as temporary housing after a natural disaster occurrence.

The Committee members expressed several points of discussion for the possibility of allowing Special Use Permits for Agri-Wedding Event Venues in the rural areas of Norman. Several of the discussion points are as follows:

1. Property/business owner must live on-site
2. The property should have a “farming” element included on-site to qualify for the Special Use Permit for an Agri-Wedding Venue. (Should the City require a State license?)
3. An Agri-Wedding Venue should come to City Council as a PUD or a Special Use Permit request
4. One of the concerns discussed is with live music/amplified music (Should variances be allowed for more than 7 Noise Variance

Permits annually? As presented the owner/operator must meet the current standards in place)

5. Live entertainment can be designated as an allowed use associated with the wedding venue. However, if the decibel level goes over the allowed sound levels in the district, Norman PD can ticket the owner.

Staff presents this information for discussion and will be present to address questions.

TINY HOUSE REGULATIONS

Zoning Districts where permitted: A-1, A-2, RE; placed on a permanent foundation only and subject to a Special Use Permit.

Minimum Lot Size: As required by the zoning district. One tiny house allowed per lot.

Tiny House Definition: A dwelling that is 400 square feet or less in floor area excluding lofts.

Utility Connections: All tiny houses must have adequate water and wastewater disposal systems and be connected to electricity prior to habitation.

Inspections: Inspections for all units shall be made on site by City of Norman building inspectors and must meet all appropriate City Code requirements. Tiny houses must be placed on site with all plumbing, electrical and mechanical components exposed for inspection and be anchored to a permanent foundation as approved by the building official.

Tiny House Subdivision/Park: Minimum of 10 acres for a tiny house subdivision/park; Allowed through a PUD Zoning District (with or without wheels).

The maximum lot coverage for a tiny house subdivision/park (structures only) shall be 40 percent.

Total impervious coverage shall be 65 percent.

ALLOWANCE FOR TINY HOUSES AS TEMPORARY DWELLING UNITS

Tiny houses on wheels may be used as a temporary dwelling unit in the A-1, A-2 and RE zoning districts if needed to house the owners of property affected by wildfires, flooding or other natural disasters with the following conditions:

1. The affected property owner must apply for and receive a building permit within a year from the date of destruction of their permanent residence in order to continue to be able to reside within the temporary dwelling; however

this time limit may be amended upon showing good cause for such an extension.

2. Tiny home must have adequate water and wastewater disposal systems and be connected to electricity prior to habitation.
3. These temporary dwelling units may not be located within ten feet of property lines, within sight triangles or over utility easements.
4. Property owners shall remove the temporary dwelling or make the necessary changes for the property to be in conformance with the regulations of zoning district in which the property is located within a time limit established by the City Manager (or his designee) or prior to the issuance of a Certificate of Occupancy for the new permanent structure on the subject property; however, these time limits may be amended upon showing good cause for such an extension.

BUILDING CODE REQUIREMENTS: Code Sections referenced below are from the International Residential Code

DEFINITIONS

Egress Roof Access Window - A skylight or roof window designed and installed to satisfy the emergency escape and rescue requirements in Section R310.2.

Landing Platform - A landing provided as the top step of a stairway accessing a loft.

Loft - A floor level located more than 30 inches (762 mm) above the main floor and open to it on at least one side with a ceiling height of less than 6 feet 8 inches (2032 mm), used as a living or sleeping space.

CEILING HEIGHT

Minimum ceiling height - Habitable space and hallways in tiny houses shall have a ceiling height of not less than 6 feet 8 inches (2032 mm). Bathrooms, toilet rooms, and kitchens shall have a ceiling height of not less than 6 feet 4 inches (1930 mm). Obstructions shall not extend below these minimum ceiling heights including beams, girders, ducts, lighting and other obstructions.

Exception: Ceiling heights in lofts are permitted to be less than 6 feet 8 inches (2032 mm).

LOFTS

Minimum loft area and dimension - Lofts used as a sleeping or living space shall meet the minimum area and dimension requirements of Sections AV104.1.1 through AV104.1.3.

Minimum area - Lofts shall have a floor area of not less than 35 square feet (3.25 m).

Minimum dimensions - Lofts shall be not less than 5 feet (1524 mm) in any horizontal dimension.

Height effect on loft area - Portions of a loft with a sloping ceiling measuring less than 3 feet (914 mm) from the finished floor to the finished ceiling shall not be considered as contributing to the minimum required area for the loft.

Exception: Under gable roofs with a minimum slope of 6:12, portions of a loft with a sloping ceiling measuring less than 16 inches (406 mm) from the finished floor to the finished ceiling shall not be considered as contributing to the minimum required area for the loft.

Loft access. The access to and primary egress from lofts shall be any type described in Sections AV104.2.1 through AV104.2.4.

Stairways. Stairways accessing lofts shall comply with Sections AV104.2.1.1 through AV104.2.1.5.

Width. Stairways accessing a loft shall not be less than 17 inches (432 mm) in clear width at or above the handrail. The minimum width below the handrail shall be not less than 20 inches (508 mm).

Headroom. The headroom in stairways accessing a loft shall be not less than 6 feet 2 inches (1880 mm), as measured vertically, from a sloped line connecting the tread or landing platform nosings in the middle of their width.

Treads and risers. Risers for stairs accessing a loft shall be not less than 7 inches (178 mm) and not more than 12 inches (305 mm) in height. Tread depth and riser height shall be calculated in accordance with one of the following formulas:

1. The tread depth shall be 20 inches (508 mm) minus $\frac{4}{3}$ of the riser height, or

2. The riser height shall be 15 inches (381 mm) minus 3/4 of the tread depth.

Landing platforms. The top tread and riser of stairways accessing lofts shall be constructed as a landing platform where the loft ceiling height is less than 6 feet 2 inches (1880 mm) where the stairway meets the loft. The landing platform shall be 18 inches to 22 inches (457 to 559 mm) in depth measured from the nosing of the landing platform to the edge of the loft, and 16 to 18 inches (406 to 457 mm) in height measured from the landing platform to the loft floor.

Handrails. Handrails shall comply with Section R311.7.8.

Stairway guards. Guards at open sides of stairways shall comply with Section R312.1.

Ladders - Ladders accessing lofts shall comply with Sections AV104.2.1 and AV104.2.2.

Size and capacity. Ladders accessing lofts shall have a rung width of not less than 12 inches (305mm) and 10 inches (254 mm) to 14 inches (356 mm) spacing between rungs. Ladders shall be capable of supporting a 200 pound (75 kg) load on any rung. Rung spacing shall be uniform within 3/8-inch (9.5 mm).

Incline. Ladders shall be installed at 70 to 80 degrees from horizontal.

Alternating tread devices - Alternating tread devices accessing lofts shall comply with Sections R311.7.11.1 and R311.7.11.2. The clear width at and below the handrails shall be not less than 20 inches (508 mm).

Ships ladders - Ships ladders accessing lofts shall comply with Sections R311.7.12.1 and R311.7.12.2. The clear width at and below handrails shall be not less than 20 inches (508 mm).

Loft Guards - Loft guards shall be located along the open side of lofts. Loft guards shall not be less than 36 inches (914 mm) in height or one-half of the clear height to the ceiling, whichever is less.

EMERGENCY ESCAPE AND RESCUE OPENINGS

General - Tiny houses shall meet the requirements of Section R310 for emergency escape and rescue openings.

Exception: Egress roof access windows in lofts used as sleeping rooms shall be deemed to meet the requirements of Section R310 where installed such that the bottom of the opening is not more than 44 inches (1118 mm) above the loft floor, provided the egress roof access window complies with the minimum opening area requirements of Section R310.2.1.

AGRI-WEDDING VENUE REGULATIONS

PURPOSE.

The purpose of this section is to provide for the orderly development of an Agri-Wedding Venue; An Agri-Wedding Venue is a Small, Intermediate or Large Agri-Wedding Venue within the City of Norman approved under a PUD, Planned Unit Development or Special Use Permit.

DEFINITIONS.

Agri-Wedding Venue - A facility located on agriculturally zoned land that has ongoing viable agricultural use and an owner-occupied residential use that provides a facility for a commercial wedding venue social gathering consisting of areas typically accessory to wedding venues; a kitchen and/or outdoor barbecue facilities, that are available for use by the private group for such activities as weddings, wedding parties, receptions and uses accessory to the wedding. This use does not include outdoor concerts, live music events or retreat events not associated with a wedding venue. The agri-wedding venue may be accommodated on the following acreages:

Small - Ten (10) acres or larger; 100 or fewer patrons

Intermediate - Twenty (20) acres or larger; 200 or fewer patrons

Large - Forty (40) acres or larger; 300 or fewer patrons

USE.

Agri-Wedding Venue. An agri-wedding venue is allowed as an accessory use to an existing agricultural business/site and an owner-occupied residential use/site with a PUD or Special Use Permit, per Chapter 22, Zoning Ordinance, in the A-1, General Agricultural District or the A-2, Rural Agricultural District. This request may be allowed on parcels of ten (10) acres or larger in size. The suitability of a parcel for an agri-wedding venue shall be determined by the characteristics of the site and by the unique capacity of the parcel to accommodate the use while preserving the essential rural character of the area and the site on which the use is located, by the ability of the parcel to accommodate the use without negative impact on the general health, safety, and welfare of the community, and by other factors the City may deem appropriate for consideration depending on the location of the property.

CONDITIONS OF USE.

1. A Pre-Development Meeting – Per Section 442.1 Amendments of Chapter 22, Zoning Ordinance, a Pre-Development meeting is required.
2. Agricultural Use – Existing or proposed agricultural use of the site is required.
3. Ownership – The property will be the primary residence of the venue operator. The operator must be on the premises for the duration of each event.
4. Maximum Number of Guests – The maximum number of guests is dependent on parcel size; “*Small, Intermediate, Large*”.
5. Food and Beverages – The serving of food and beverages is permitted only as part of the event/ceremony. Any on-site preparation and handling of food or beverages must comply with all applicable Federal, State or Local Standards.
6. Seasonal Operation – Ceremonies are limited to no more than “four times” per week.
7. Hours of Operation – Ceremonies and associated activities shall only be allowed between the house of 10:00 a.m. to 10:00 p.m. Sunday – Wednesday and 10:00 a.m. to 12 midnight Thursday – Saturday. All lights associated with the facility must be turned off at the designated time/day.
8. Overnight Accommodations – Overnight accommodations are allowed if approved as part of the application for PUD or Special Use and the unit must be recognized as a Guest House as defined in Chapter 22, Zoning Ordinance.
9. Off-Street Parking – Off-street parking shall be required in the ratio of one (1) parking space for each three attendees based on the maximum number of attendees planned for the site. The off-street parking area and the number of parking spaces shall be documented on the required site plan. Parking areas consisting of dirt/grass, gravel, asphalt or concrete are considered an approved parking surface in these rural areas. Access points/entry at the street must be maintained and kept clear of dirt and mud. On-street parking is prohibited.
10. Setbacks – The minimum setbacks from neighboring houses and property lines for the various activities associated with the venue shall be as follows:
 - a. Parking: 100 feet from residential property lines; 200 feet from neighboring houses

- b. Outdoor/Indoor Activity Spaces: 300 feet from residential property lines;
400 feet from neighboring houses
- 11. Landscaping/Screening – Landscaping shall be required to buffer the use from adjacent land uses and to provide screening when such screening does not presently exist on the site. A landscape plan shall be submitted at the time of zoning application. Each landscape plan will be reviewed on its own merit based on adjacent use and location of facilities on-site.
- 12. Grading Plan – Any proposed grading shall observe all requirements of Chapter 19 Subdivision Regulations of the City of Norman Code. If a grading plan is required, it shall be submitted in conjunction with the zoning application.
- 13. Traffic – A transportation management plan shall be submitted as part of an application for Special Use Permit. The plan shall address traffic control, including traffic movement to the public street system and impact on the surrounding roadways. Such facilities shall not be located on a private road unless approved by all adjacent property owners responsible for maintaining the private road.
- 14. Structures – All existing or proposed structures to be used for the wedding ceremony venue shall be inspected by the City’s Building Official and must meet applicable Building Code and Local Amendments as adopted. Building permits are required of all new and addition/alteration applications for the site. Certificate of Occupancy is required prior to operations.
 - a. Temporary Structures – Temporary structures, including tents and canopies, may be allowed. Tents and canopies may be erected no more than two (2) days prior to an event and must be removed no more than 72 hours following the event.
- 15. Sanitary Facilities – Sanitary facilities adequate for the number of attendees shall be provided. Portable toilets may be approved for temporary use, and must be screened from view from roads and neighboring properties by landscaping or wooden enclosure. No portable toilets shall be located closer than 400 feet from a neighboring residential structure. Sanitary facilities may be delivered no more than two (2) days prior to an event and must be removed no more than 72 hours following the event.
- 16. Lighting – All outdoor pole mounted lighting fixtures; i.e. security lights, less than 400 feet from a neighboring house must be full cut-off fixtures. All wall mounted

lights and accessory lights must be full cut-off fixtures as described in the Commercial Outdoor Lighting Ordinance.

17. Noise – All wedding venues shall comply with the City’s noise standards found in Article III, Section 10 of the City of Norman Code of Ordinances, unless otherwise approved as part of the PUD or Special Use Permit request.
18. Sound Amplification – Amplification of music is allowed only in conjunction with the wedding ceremony and reception. Compliance with the Noise Ordinance is required.
19. Waste – All solid waste must be stored in a manner that prevents the propagation, harborage, or attraction of flies, rodents, or other nuisance conditions and must be removed at least once every seven days by City Sanitation.
20. Signage – Requested square footage of signage proposed for the site must be included in the request for Special Use Permit. No other signage will be approved unless done so by City Council.
21. Fire and Emergency Vehicle Access – The site must comply with Fire and Life Safety Requirements. A Certificate of Occupancy approved by the Fire Department is required prior to use of the site.
22. Other Activities – Other than the wedding ceremonies and receptions authorized under this section, no other commercial events may be conducted on the approved site.

ITEM 3

GREEN BUILDING CODES/INCENTIVES



TO: City Council Community Planning and Transportation Committee

THRU: Steve Lewis, City Manager

FROM: Terry Floyd, Development Coordinator

DATE: November 9, 2017

SUBJECT: Green Building Code and Green Infrastructure/Low-Impact Development (LID) Incentives

At the November 16th Council Community Planning and Transportation Committee (CPTC) meeting, staff will be presenting introductory information regarding incentive programs for green building code construction and green infrastructure/Low-Impact Development (LID) projects. This information will be presented as starting point for discussion and to gather feedback on potential incentive areas for additional staff research and future committee program development and consideration.

The City Council identified incentivizing optional “green building codes” as a secondary destination short-term goal (1-2 years) during the August 2017 Council Retreat. There has also recently been discussion and input from the Comprehensive Plan (PlanNorman) Steering Committee to recommend updating the Engineering Design Criteria and Standards to include requirements for LID stormwater infrastructure elements, and also to evaluate the prospect of development incentives as part of the recommendations for priorities included in the Steering Committee 5-Year Action Plan.

Currently, both the new Norman Public Library East and Central Library are utilizing both green infrastructure/LID practices and pursuing Leadership in Energy and Environmental Design (LEED) certification in their site development and construction. The City also acquired LEED certification for Fire Station #9 on East Alameda St.

Green Building Definition & Incentives

Definition

“Green Building” is a term that is commonly used to describe sustainable or green building practices utilized by construction projects. This term is primarily used to describe construction of buildings and facilities on a project site. “Green building codes” are codes that are beyond the traditional, standard adopted building codes.

Currently adopted standard building codes by the State (and City of Norman) include:

- 2015 International Residential Code (IRC)
- 2015 International Building Code (IBC)
- 2015 International Mechanical Code (IMC)

In addition to the State-adopted codes listed, the City of Norman has also adopted the 2006 International Energy Conservation Code (IECC), which requires energy-efficient elements that are above the standard State-adopted building codes.

Additional “green code” requirements are those that exceed traditional building code standards and encourage green building programs which regulate sustainability through siting; site development measures; water and energy conservation and efficiency; materials and resource efficiency; and indoor environmental quality¹.

Although there are many terms used to describe these codes/certification programs, the most common “green building codes” include:

- U.S. Green Building Council’s (USGBC’s) Leadership in Energy and Environmental Design (LEED) rating system
- International Green Construction Code (IgCC)
- Locally developed green building codes and programs

Incentive Programs

Incentive programs have been utilized by many municipalities/local jurisdictions in the U.S. to help facilitate “green” development. Over 200 local jurisdictions, including cities and counties in the U.S, offer some form of incentive for green building. Currently, no cities in Oklahoma appear to offer green building code incentives.

There are a variety of incentives offered in the local jurisdictions, but generally, the incentive strategies can be divided into three categories:

1. **Structural Incentives:** Expedited review/permitting processes; density and height bonuses
2. **Financial Incentives:** Permit fee reduction/waiver; grants; revolving loan funds, tax credits
3. **Other Incentives:** Technical assistance to assist developers with education; marketing assistance (ex. signage, awards, press releases)

Additional information is summarized in an article from the United States Green Building Code Council (USGBC) included as Attachment A.

Green Infrastructure/Low-Impact Development (LID) Definition & Incentives

Definition

Green Infrastructure/Low-Impact Development (LID) include methods and strategies that can be used in land development to maintain the hydrologic character of the site or region through reduction of runoff and pollutant loads by source control, water retention on site,

¹ U.S. Department of Energy (2011). *Going Beyond Code: A guide to creative effective green building programs for energy efficient and sustainable communities* (pp. 1-124). U.S. Department of Energy

using natural landscape and hydrology^{2&3}. These methods are used primarily in land (i.e. site) development, while green building codes are used primarily methods used to construct structures on the site.

Common examples of LID development practices/structural controls include:

- Bio retention
- Dry Ponds
- Engineered Wetlands
- Green Roofs
- Infiltration Basins
- Infiltration Trenches
- Porous Pavement
- Vegetated Buffers
- Vegetated Swales
- Wet Ponds
- Rain Gardens
- Planting native, drought-tolerant plants

The City of Norman has adopted many of these practices through its adoption of the City of Wichita/Sedgwick County Stormwater Manual included in Section 19-411B.2 of the City Subdivision Regulations. A list and description of structural controls/practices included in the manual is included as Attachment B.

Incentive Programs

A number of cities and local jurisdictions across the U.S. have utilized incentive programs to encourage the use of green infrastructure practices for private development.

Some of the most common incentives found include⁴:

- **Stormwater Fee Discounts:** Reduced impervious areas and runoff volumes
- **Development Incentives:** Zoning upgrades, expedited permitting, increased densities
- **Grants:** Direct funding for green infrastructure upgrades and practices
- **Rebates & Installation Financing:** Funding, tax credits or reimbursements to property owners for certain green infrastructure installations
- **Awards & Recognition Programs:** Marketing and public outreach to highlight successful green infrastructure projects

Additional information regarding green infrastructure/LID incentives is included from an U.S. Environmental Protection Agency (EPA) report is included as Attachment C.

² Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices(pp. 1-30). (2007). Washington, DC: United States Environmental Protection Agency, Nonpoint Source Control Branch.

³ Ruby, E., & Gillespie, D. (n.d.). Low Impact Development (LID): A sensible approach to land development and stormwater management (pp. 1-4, Rep.). Office of Environmental Health Hazard Assessment & the California Water and Land Use Partnership.

⁴ Managing wet weather with green infrastructure municipal handbook: incentive mechanisms(pp. 1-33). (2009). Washington, D.C.: U.S. Environmental Protection Agency.

Attachment A

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Account

Good to know: Green building incentive strategies

Published on **2 May 2014**

Posted in [LEED](#)
Published on **2 May 2014**

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One of the most effective and more popular strategies to encourage green building is to incentivize the market through financial or structural incentives. Rewarding developers or homeowners who practice green building techniques spurs innovation and demand for green building technologies.

Structural Incentives

These incentives work by encouraging developers to practice green building through rewards such as additional density bonuses or expedited permitting processes. At low or no cost to the municipality, building green can be made a more attractive option to developers.

Expedited Review/Permitting Processes: Review and permitting processes vary widely in length from one jurisdiction in another, in some municipalities these processes can take up to 18 months. Allowing developer to significantly reduce the duration of this process, in exchange for committing to specific green building standards, can result in significant cost savings for the developer. This allows a municipality to offer a significant incentive with little or no financial investment, since it only requires a shift in permitting priority.

Density and Height Bonuses: Like expedited permitting processes, density bonuses require little or no financial investment by the municipality. Many municipalities allow for percentage increases in Floor Area Ratio or other measures of density contingent upon certification or proof of green building practices.

Financial Incentives

Financial incentives are direct incentives in the form of tax credits or grants to developers who propose or build green buildings. However, many of these programs do not directly impact a municipality's finances since the proposed developments will often increase the assessed property value in the city and which allows the city to offer financial incentives without any threat of reduced revenues.

Tax Credits: Many municipalities already offer tax credits as a means of advancing specific policy agendas. These same principles can be applied to homes or developments that achieve certain green building goals.

Fee Reduction/Waiver: Some municipalities that charge fees for permit review or other permitting processes have begun offering reductions or waivers for developers following green building standards. Many times this incentive can be paired with a structural incentive such as expedited permitting.

Grants: Unlike the other incentive programs discussed above grants will require a financial investment by the city. These programs can often be funded by one of the revenue generating strategies discussed earlier. Grants can be given to homeowners or developers to go towards certification or other costs associated with green building.

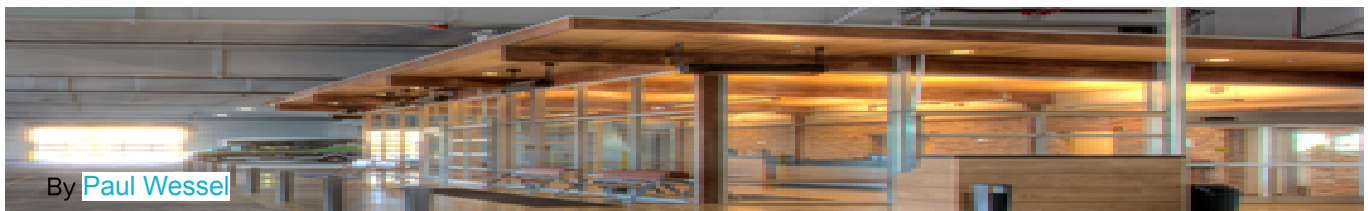
Revolving Loan Funds: Typically these programs work by allocating a large fund to be used for low interest loans to those seeking to build or renovate to green building standards. These loans are then repaid to the fund at a rate lower than the operational cost savings from the improvements in order to lower the up-front costs associated with some green building practices and encourage home owners and developers to build green. The fund is continuously replenished by the repayments so that it can be used for additional loans.

Other Incentives

Technical Assistance: Many municipalities are also offering free planning or certification training and assistance. This assistance may allow for a developer who is unfamiliar with green building practices to build green.

Marketing Assistance: One important aspect of certifying projects under LEED is being able to use this as a marketing tool. Some municipalities have begun to offer free marketing assistance via signage, awards, websites, press releases, and other means as an incentive for developers to build to green standards.

Related Articles



By [Paul Wessel](#)

Parksmart and LEED: Creating ripples beyond the building

IN LEED

11.3.17



By [Melissa Baker](#)

Agility and evolution: How LEED is moving with the market

Attachment B

Other Stormwater Management Facilities

Other stormwater management facilities are controls that do not provide TSS treatment and therefore may be used for runoff quantity control only (i.e., peak discharge or volume control). These controls should be used in coordination with primary or secondary TSS treatment facilities. This category also includes the green (or vegetated) roof which is a special control that addresses both water quality and quantity, because it reduces the amount of stormwater runoff.

Table 3-1 lists the all of the structural stormwater control practices included in this Manual. A summary of the suitability, performance, and other considerations applicable to these controls is presented in Appendix E Table E-1 and Table E-2. A detailed discussion of each of the controls, as well as design criteria and other information, is provided in sections 3.2, 3.3 and 3.4. Operations and maintenance checklists are provided in section **Error! Reference source not found.**

Table 3-1 Structural Controls

Structural Control	Description
Stormwater (Wet) Ponds (primary)	Stormwater ponds are stormwater retention basins that have a permanent pool (or micropool) of water. All or a portion of runoff from each rain event is detained and treated in the pool. A stormwater pond may incorporate a portion of the WQ_v in extended detention above the permanent pool level.
Conventional Dry Detention Pond (other) Dry Extended Detention Pond (primary) Underground Dry Detention (other)	Conventional dry detention ponds are surface facilities intended to provide for the temporary storage of stormwater runoff to reduce downstream water quantity impacts. Dry extended detention (ED) ponds are surface facilities intended to provide for the temporary storage of stormwater runoff to reduce downstream water quantity impacts as well as provide water quality treatment. Underground detention tanks and vaults are an alternative to conventional surface dry detention for space-limited areas where there is not adequate land for a dry detention basin or multi-purpose detention area.
Enhanced Dry Swale (primary) Grass Channel (primary)	Enhanced swales are vegetated open channels with underdrain provisions that are designed and constructed to capture and treat stormwater runoff within dry cells formed by check dams or other means. Grass swales or channels provide “biofiltering” of stormwater runoff as it flows across the grass surface of the conveyance channel.

Structural Control	Description
<p>Infiltration Trench (primary)</p> <p>Soakage Trench (primary)</p>	<p>An infiltration trench is an excavated trench filled with stone aggregate used to capture and allow infiltration of stormwater runoff into the surrounding soils from the bottom and sides of the trench. Soakage trenches are a variation of infiltration trenches. Soakage trenches drain through a perforated pipe buried in gravel. They are used in highly impervious areas where conditions do not allow surface infiltration and where pollutant concentrations in runoff are minimal (i.e. non-industrial rooftops). They may be used in conjunction with other stormwater devices, such as downspouts.</p>
<p>Filter Strip (primary)</p> <p>Surface Sand Filter (primary)</p> <p>Underground Sand Filter (secondary)</p> <p>Organic Filter (secondary)</p>	<p>Filter strips provide “biofiltering” of stormwater runoff as it flows across and through the grassed surface. Surface sand filters are structures designed to treat stormwater runoff through filtration, using a sand bed as its primary filter media. Filtered runoff may be returned to the conveyance system, or allowed to partially exfiltrate into the soil. Underground sand filters are a design variation of the surface sand filter, where the sand filter chambers and media are located in an underground vault. Organic filters are surface sand filters where organic materials such as a leaf compost or peat/sand mixture are used as the filter media. These media may be able to provide enhanced removal of some contaminants, such as heavy metals. Given their potentially high maintenance requirements, they should only be used in environments that warrant their use.</p>
<p>Bioretention Area (primary)</p>	<p>Bioretention areas are shallow stormwater basins or landscaped areas which utilize engineered soils and vegetation to capture and treat stormwater runoff. Runoff may be returned to the conveyance system, or allowed to partially infiltrate into the soil or evaporate.</p>
<p>Stormwater Wetland (primary)</p>	<p>Stormwater wetlands are constructed wetland systems used for stormwater management. Stormwater wetlands consist of a combination of shallow marsh areas, open water, and semi-wet areas above the permanent water surface.</p>
<p>Proprietary Treatment Systems (secondary)</p>	<p>Proprietary treatment systems are manufactured structural control systems available from commercial vendors designed to treat stormwater runoff and/or provide water quantity control. Proprietary systems often can be used on small sites and in space-limited areas, as well as in pretreatment applications. However, proprietary systems are often more costly than other alternatives, may have high maintenance requirements, and often lack adequate independent performance data.</p>
<p>Gravity Separator (secondary)</p>	<p>Gravity separator controls use the movement of stormwater runoff through a specially designed structure to remove target pollutants (such as oil from water). They are typically used on smaller impervious commercial sites and urban hotspots. These controls are typically used as a pretreatment measure and as part of a treatment train approach.</p>

Section 3.1 - Stormwater Management Controls Overview

Structural Control	Description
Alum Treatment (secondary)	Alum treatment provides for the removal of suspended solids from stormwater runoff entering a wet pond by injecting liquid alum into storm sewer lines on a flow-weighted basis during rain events. Alum treatment should only be considered for large-scale projects where high water quality is desired.
Green Roof (other) Modular Porous Paver System (other) Porous Pavement (other)	A green roof uses a small amount of substrate over an impermeable membrane to support a covering of plants. The green roof both detains and consumes (through evapotranspiration) runoff from the otherwise impervious roof surface as well as moderates rooftop temperatures. A green roof can also provide aesthetic or habitat benefits. Modular porous paver systems consist of open void paver units laid on a gravel subgrade. Porous pavement is a permeable surface with an underlying stone reservoir to temporarily store surface runoff before it infiltrates into the subsoil. (Porous concrete is the term for a mixture of coarse aggregate, Portland cement, and water that allows for rapid movement of water through the concrete.) Both porous concrete and porous paver systems have high workmanship and maintenance requirements.

3.1.2 Suitability of Stormwater Controls to Meet the IDS Approach Objectives

3.1.2.1 Water Quality

All of the primary and secondary stormwater controls provide some degree of pollutant removal. Pollutant removal capabilities for a given structural stormwater control practice are based on a number of factors including the physical, chemical, and/or biological processes that take place in the structural control and the design and sizing of the facility. In addition, pollutant removal efficiencies for the same structural control type and facility design can vary widely depending on the tributary land use and area, incoming pollutant concentration, flow rate, volume, pollutant loads, rainfall pattern, time of year, maintenance frequency, and numerous other factors.

Table 3-2 provides nominal design removal efficiencies for each of the control practices. It should be noted that these values are average pollutant reduction percentages for design purposes derived from sampling data, modeling, and professional judgment. A structural control design may be capable of exceeding these performances; however the values in the table are minimum reasonable values that can be assumed to be achieved when the structural control is sized, designed, constructed, and maintained in accordance with recommended specifications in this Manual. For some listed controls, pollutant removal rates are not indicated because there is insufficient data for setting those rates, or the removal efficiency is dependent on the design of the specific device or installation. Where the pollutant removal capabilities of an individual structural stormwater control are not sufficient for a given site

Attachment C

Descriptions of Incentive Types

Stormwater Fee Discount

Incentives tied to stormwater fees encourage retrofits of existing properties and implementation of green infrastructure in new developments. In cities of varying sizes across the United States, fee discounts and credits provide an opportunity for property owners to reduce the amount of stormwater fees they pay by decreasing impervious surfaces or by using green infrastructure techniques that reduce the amount of stormwater runoff. In turn, public infrastructure is less burdened when private property owners manage their own stormwater runoff on-site. Discounts also support the fee-for-service system because property owners can reduce the amount they pay by reducing the service received.

Before setting the credit standard or discount, whether for the use of green infrastructure or reductions in impervious surfaces, municipalities should set appropriate management goals and determine how to credit private property owners for whatever action is being incentivized. Table 1 outlines common frameworks for setting goals and developing the process for implementing fee discounts.

Some cities provide a percent discount for level of performance. This discount is primarily given for stormwater quantity reductions and in fewer cases for pollution reduction for water quality purposes. Discounts are also offered for impervious surface reductions, whether for total area or by the square foot. A credit system can be based on the implementation of specific practices, such as rain gardens, green roofs or even tree canopy area. In some cases, credits vary based on the practice and the goals the municipality has for private lands.

Table 1: Framework for Stormwater Fee Discount Programs

Goal of Discount	Mechanism for Fee Reduction	Process for Implementation
Reduce Imperviousness	<ul style="list-style-type: none"> • Percent fee reduction • Per-square-foot credit 	<ul style="list-style-type: none"> • Percent reduction in imperviousness • Square feet of pervious surfaces
On-site Management	<ul style="list-style-type: none"> • Percent fee reduction • Quantity/Quality credits (performance-based) 	<ul style="list-style-type: none"> • List of practices with associated credits • Total area (square feet) managed
Volume Reduction	<ul style="list-style-type: none"> • Percent fee reduction • Performance-based quantity reduction 	<ul style="list-style-type: none"> • Percent reduction in imperviousness • Performance-based • Total area (square feet) managed • Practices based on pre-assigned performance values
Use of Specific Practices	<ul style="list-style-type: none"> • Percent fee reduction • One time credit 	List of practices with associated credits

Development Incentives

Development incentives apply to private developers that take initiative by using more sustainable site design and green building practices. These incentives are typically provided within the framework of existing land use or development regulations and often remove or decrease fees, requirements, or steps in the permit process. Chicago's Green Permit Program reviews permits much faster, even in as few as 30 days, for projects that meet certain LEED (Leadership in Energy and Environmental Design) criteria that include better stormwater management practices. Portland's Floor Area Ratio (FAR) Bonus increases a building's allowable area in exchange for adding an ecoroof/greenroof. Portland has seen over \$225 million in additional private development through this program, and more than 120 ecoroofs have been built in the center city district. These incentives can be used to improve environmental performance and support economic development. Development incentives also can be used to encourage green infrastructure beyond the site scale by encouraging infill development, aesthetically pleasing and walkable neighborhoods, and compact, mixed use community designs.

Grants

Grant programs can be used to disburse money directly to individual homeowners, other property owners and community groups for stormwater-related projects and can help a city or county add green infrastructure projects to the landscape. Grants can be used to encourage both site-specific green infrastructure practices such as rain gardens, street retrofits, green roofs, and cisterns, as well as neighborhood and municipal scale projects such as wetland construction or stream restoration projects. Santa Monica provides \$160,000 per year in Landscape Grants to develop sites with native landscaping that reduce water consumption and absorb runoff. Chicago's Green Roof Grant program has helped this former industrial city add over 2.5 million square feet of green roofs across the City. The program grants \$5000 awards to residential and small commercial buildings that meet criteria based on location, visibility and environmental benefit. Green infrastructure grant programs provide awards and savings to developers and properties that take extra steps to add greener stormwater management practices to both new and existing sites.

Rebates and Installation Financing

Communities offer rebates and installation financing to provide incentives for property owners to install green infrastructure practices on their property. These rebates and financing opportunities are often targeted to specific areas with the greatest need for green infrastructure, most often combined sewer areas. However, these programs may also be developed to achieve a range of water quality goals and implement community livability initiatives. For example, subsidies might be provided in neighborhoods with a high percentage of imperviousness or limited access to public green space.

Rebates and financing tools are also commonly used to encourage the use of specific practices based on priority environmental and community goals such as cisterns for water conservation, rain gardens to improve groundwater recharge, and green roofs to mitigate urban heat island effects.

Rebates and installation financing are also an effective means of educating the public about the benefits of green infrastructure and how it can be applied to a variety of property types and settings.

Awards and Recognition Programs

Awards and recognition programs highlight successful examples of green infrastructure in a community. Award winners often include businesses and property owners as well as non-profit organizations, community organizations, individuals, schools or government agencies. Awards are provided to recognize innovations in green infrastructure practices and design, and may include projects or plans that focus on water conservation and reuse, stormwater mitigation and management, landscaping and site design, watershed restoration and other sustainable strategies for water quality protection.

Granting awards to local projects gives valuable recognition to innovators that help to drive the field forward. At the same time, awards increase public awareness about local projects and the ways that stormwater can be used as a valuable resource. Adding signage to award-winning projects can help further educate the public and help the public recognize its impacts and connection to the local watershed.

Stormwater Incentive Examples

The following table provides a compendium of known examples of local incentives for green infrastructure organized by municipality and type of incentive. Clicking on the blue check marks will direct the reader to more information about the specific municipal examples, including the program name, description, the incentive beneficiary and a reference for finding out more information.

Table 2: Examples of local incentives for green infrastructure

	Stormwater Fee Discounts	Development Incentives	Grants	Rebate/ Installation Financing	Awards/ Recognition
CA: Santa Monica			✓	✓	
CA: Palo Alto				✓	
CO: Denver	✓				
DC: Washington				✓	
FL: Gainesville	✓				
FL: Maitland				✓	
FL: Orlando	✓				
FL: Sarasota County		✓			
GA: Gwinnett County	✓				
GA: Henry County	✓				
IL: Chicago		✓	✓	✓	✓
IL: Rock Island				✓	
KS: Wichita	✓				
KY: Louisville/Jefferson County	✓				
KY: Sanitation District No. 1	✓				
MA: Reading	✓				
MD: Montgomery County				✓	
MN: Burnsville				✓	
MN: Maplewood				✓	
MN: Minneapolis	✓			✓	
MN: New Brighton	✓				
MN: Saint Paul	✓				
MO: Kansas City	✓				
NC: Charlotte	✓				
NC: Durham	✓				
NC: Raleigh	✓				
NY: New York		✓			
OH: Columbus	✓				
OH: Cincinnati				✓	
OK: Tulsa	✓				
OR: Portland	✓	✓	✓	✓	✓
OR: Sandy	✓				
PA: Philadelphia	✓	✓			✓
SC: Beaufort County	✓				
TN: Knox County		✓			
TX: Austin	✓			✓	
U.S. Virgin Islands			✓		
VA: Chesapeake	✓				
VA: Prince William County	✓				
WA: Bellevue	✓				
WA: King County	✓		✓		✓
WA: Marysville	✓				
WA: Seattle	✓	✓	✓	✓	