



TO: Mayor Tim Pogue  
Board of Aldermen

RE: Pedestrian Signal on Manchester Road

After considerable discussion with MoDot, it is recommended that you approve the attached agreement to authorize installation of safety enhanced pedestrian signals on Manchester Road at Old Ballwin.

If possible, we will use city personnel to install these signals. If not, we will solicit bids and come back to the Board for final approval.

Sincerely,

A handwritten signature in black ink that reads 'Robert Kuntz'. The signature is written in a cursive style with a large, looping 'R' and 'K'.

Robert Kuntz

City Administrator

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Missouri Department of Transportation

1590 Woodlake Drive  
Chesterfield, Missouri 63017-5712  
314.275.1500  
Fax: 573.522.6475  
1.888.ASK MODOT (275.6636)

May 21, 2019

Mr. Bob Kuntz  
City Administrator  
City of Ballwin  
1 Government Center  
Ballwin, MO 63011

Re: Pedestrian Crossing  
Manchester Road at Old Ballwin

Dear Mr. Kuntz:

This letter serves as a letter of agreement between the Missouri Department of Transportation (MoDOT) and the City of Ballwin regarding the installation of Rectangular Rapid Flashing Beacons (RRFBs) on Route 100 (Manchester Road) at the existing pedestrian cross walk at Old Ballwin Road. Per our discussions, MoDOT will furnish the city with two (2) sets of RRFBs that the city will have installed under a MoDOT permit at the above location. MoDOT will provide the city the specifications for the installation of the devices that the city can then provide to their contractor.

Upon notification that the city's Board of Alderman has approved the city's role in the installation of these devices MoDOT will procure the devices as quickly as possible. At this time, the typical lead time to deliver the devices once they have been ordered is up to eight (8) weeks. MoDOT will furnish a permit to the city and their contractor for the installation of the devices.

Once installed, MoDOT will be responsible for the maintenance of the devices.

Please let me know if you have any questions. I can be reached at 314-453-1785 or [karen.yeomans@modot.mo.gov](mailto:karen.yeomans@modot.mo.gov).

Sincerely,



Karen Yeomans, P.E.  
Area Engineer, Southwest St. Louis County



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*Our mission is to provide a world-class transportation experience that delights our customers and promotes a prosperous Missouri.*

[www.modot.org](http://www.modot.org)



Bob Kuntz &lt;bkuntz@ballwin.mo.us&gt;

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**RE: Flashing beacons - pedestrian crossing on Manchester**

1 message

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**KAREN D YEOMANS** <Karen.Yeomans@modot.mo.gov>

Tue, May 21, 2019 at 10:09 AM

To: Bob Kuntz &lt;bkuntz@ballwin.mo.us&gt;

Bob

I can send you a signed copy if you need that for the board meeting. Again, I don't have an installation cost, our bid costs include installation, so the cost we have of \$15,000 per pair includes installation cost. For an installation contractor, I would think that any of the ones who handle signal and lighting installation would be best.

I think we target completion by the end of summer. Our procurement process will probably take about a month, and then the lead time for delivery of the devices is 4 to 8 weeks.

Karen Yeomans, P.E.

Area Engineer, Southwest St. Louis County

1590 Woodlake Drive

Chesterfield, MO 63017

314-453-1785

**Please note new phone number****From:** Bob Kuntz [mailto:bkuntz@ballwin.mo.us]**Sent:** Monday, May 20, 2019 4:09 PM**To:** KAREN D YEOMANS**Subject:** Re: Flashing beacons - pedestrian crossing on Manchester

Karen

The letter looks fine. It will be on the agenda for our next Board meeting on June 17. A installation cost estimate would be very helpful. Also, If you have any preferred or recommended contractors, that information would be helpful

as well. Once we get this approved, any estimated timetable for a targeted completion date?

Ty

Bob

**Bob Kuntz**

City Administrator  
City of Ballwin, MO

phone 636.227.8599

website [www.ballwin.mo.us](http://www.ballwin.mo.us)



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On Fri, May 17, 2019 at 9:42 AM KAREN D YEOMANS <[Karen.Yeomans@modot.mo.gov](mailto:Karen.Yeomans@modot.mo.gov)> wrote:

Bob and Chief Scott

Attached is a draft letter of agreement for the purchase and installation of the rectangular rapid flashing beacons (RRFB) on Manchester at Old Ballwin. Please review and send me any changes or comments to the letter. Also attached are the specifications and a detail drawing that we used on a recent MoDOT project in the city. I think this may be what your contractor would need to install the devices. Let me know if you have any questions.

Karen Yeomans, P.E.

Area Engineer, Southwest St. Louis County

1590 Woodlake Drive

Chesterfield, MO 63017

314-453-1785

In preparation for our 2:30 meeting this afternoon, please see the attached photos for further discussion.

Respectfully,

Chief Scott



## RECTANGULAR RAPID FLASHING BEACONS

**1.0 Description.** Rectangular Rapid Flashing Beacons (RRFBs) shall be placed at the locations indicated in the plans. Rectangular Rapid Flashing Beacons shall consist of two signal posts with each post having pedestrian crossing signs and two rapid flashing beacons facing both directions of traffic.

### **2.0 Beacon Requirements.**

#### 1. General Conditions:

- a. RRFBs shall meet requirements set forth by this JSP and in the MUTCD and found at ([http://mutcd.fhwa.dot.gov/resources/interim\\_approval/ia11/fhwamemo.htm](http://mutcd.fhwa.dot.gov/resources/interim_approval/ia11/fhwamemo.htm)).
- b. An RRFB shall consist of two rapidly and alternately flashed rectangular yellow indications having LED-array based pulsing light sources, and shall be designed, located, and operated in accordance with the detailed requirements specified below.
- c. Each post shall have both front and rear facing signs and RRFBs for a total of 4 pedestrian signs, four plaques, and 8 RRFBs per crossing.
- d. Power for the RRFBs shall be self-sustained through solar panels and batteries.

#### 2. Restrictions:

- a. An RRFB shall only be used to supplement a W11-2 (Pedestrian) with a diagonal downward arrow (W16-7p) plaque, located at or immediately adjacent to a marked crosswalk.
- b. An RRFB shall not be used for crosswalks across approaches controlled by YIELD signs, STOP signs, or traffic control signals. This prohibition is not applicable to a crosswalk across the approach to and/or egress from a roundabout.
- c. An RRFB shall not be installed independent of the crossing signs for the approach the RRFB faces. The RRFB shall be installed on the same support as the associated W11-2 (Pedestrian) and plaque.

#### 3. Beacon Dimensions and Placement in Sign Assembly:

- a. Each RRFB shall consist of two rectangular-shaped yellow indications, each with an LED-array based light source. Each RRFB indication shall be a minimum of approximately 5 inches wide by approximately 2 inches high.
- b. The two RRFB indications shall be aligned horizontally, with the longer dimension horizontal and with a minimum space between the two indications of approximately seven inches (7 in), measured from inside edge of one indication to inside edge of the other indication.
- c. The outside edges of the RRFB indications, including any housings, shall not project beyond the outside edges of the W11-2 sign.
- d. As a specific exception to 2003 MUTCD Section 4K.01 guidance, the RRFB shall be located between the bottom of the crossing warning sign and the top of the supplemental downward diagonal arrow plaque. (or, in the case of a supplemental advance sign, the AHEAD plaque), rather than 12 inches above or below the sign assembly. (See example photo at: [http://mutcd.fhwa.dot.gov/resources/interim\\_approval/ia11/fhwamemo.htm#image](http://mutcd.fhwa.dot.gov/resources/interim_approval/ia11/fhwamemo.htm#image)).

4. Beacon Flashing Requirements:

- a. When activated, the two yellow indications in each RRFB shall flash in a rapidly alternating "wig-wag" flashing sequence (left light on, then right light on).
- b. As a specific exception to 2003 MUTCD Section 4K.01 requirements for the flash rate of beacons, RRFBs shall use a much faster flash rate. Each of the two yellow indications of an RRFB shall have 70 to 80 periods of flashing per minute and shall have alternating but approximately equal periods of rapid pulsing light emissions and dark operation. During each of its 70 to 80 flashing periods per minute, one of the yellow indications shall emit two rapid pulses of light and the other yellow indication shall emit three rapid pulses of light.
- c. The flash rate of each individual yellow indication, as applied over the full on-off sequence of a flashing period of the indication, shall not be between 5 and 30 flashes per second, to avoid frequencies that might cause seizures.
- d. The light intensity of the yellow indications shall meet the minimum specifications of Society of Automotive Engineers (SAE) standard J595 (Directional Flashing Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles) dated January 2005.

5. Beacon Operation:

- a. The RRFB shall be normally dark, shall initiate operation only upon pedestrian actuation, and shall cease operation at a predetermined time after the pedestrian actuation or, with passive detection, after the pedestrian clears the crosswalk. The length of actuation shall be programmable and changeable.
- b. All RRFBs associated with a given crosswalk (including those with an advance crossing sign, if used) shall, when activated, simultaneously commence operation of their alternating rapid flashing indications and shall cease operation simultaneously.
- c. If pedestrian pushbuttons (rather than passive detection) are used to actuate the RRFBs, a pedestrian instruction sign with the legend PUSH BUTTON TO TURN ON WARNING LIGHTS should be mounted adjacent to or integral with each pedestrian pushbutton. Push buttons shall meet American's with Disabilities Act (ADA) requirements in both location and design with both visible and audible feedback when pushed.
- d. The duration of a predetermined period of operation of the RRFBs following each actuation should be based on the MUTCD procedures for timing of pedestrian clearance times for pedestrian signals.
- e. A small light directed at and visible to pedestrians in the crosswalk will be installed integral to the RRFB or push button to give confirmation that the RRFB is in operation.

6. Other:

- a. Except as otherwise provided above, all other provisions of the MUTCD applicable to Warning Beacons shall apply to RRFBs.
- b. The signs shall meet the requirements of Sec 903. The minimum height of the lowest sign shall be seven feet if mounted in sidewalk to meet ADA requirements.
- c. The W11-2 and W16-7p signs shall be reflective yellow.
- d. The post shall be meet MoDOT signal standards in Sec 902. The post will be located so that a minimum of four feet of walkable sidewalk is maintained.

**4.0 Method of Measurement.** Measurement for installation of RRFBs will be made per each pedestrian crossing. No measurement will be made for individual items that make up the RRFB system.

**5.0 Basis of Payment.** All labor, equipment, and materials necessary to install the beacons, signs, solar panels with batteries, push buttons, post, foundation, and other equipment to have a fully operational RRFB system will be included in the pay item below.

Item No.	Unit	Description
902-99.02	Each	Rectangular Rapid Flashing Beacon