The term complete street was coined in 2005 to describe a condition on a street where all user groups would be comfortably accommodated along and across the street. The intent was to create a memorable term that could be used to shape policy and provide a short-form that speaks to the inclusivity within the largest part of the public realm (i.e. within the rights-of-way).

The long-term vision for Eldridge Parkway is to become a complete street. A complete street represents more than the technical accommodation of the various user groups—it speaks to the quality of the street’s design to create a place or to contribute to a place. A complete street provides pedestrians, bicyclists, and transit users the same access, priority, and comfort as motor vehicle drivers, and is designed to be both great public space and sustainable transportation network. Cities from Austin, TX to Boston, MA have recently developed guidelines for complete streets in their communities, and Houston passed its own complete streets ordinance in 2014. The Energy Corridor District has an opportunity to implement its own vision for complete streets, informed by its unique neighborhood contexts, where people travel, recreate, exchange ideas, and conduct business.

To achieve the vision set forth by The Energy Corridor District stakeholders, the master plan recommends the transformation of several key streets, with Eldridge Parkway as a pilot opportunity. From slowing speeds through good design, to allocating the space within the cross-section equitably and using the right materials, complete streets support the land uses on each side. Expressed more broadly, such streets should be designed as places:

- both where people will go for social and economic exchange, and also a path along which people will walk, cycle, and drive.
- that will be an important address for a mix of land uses and a key feature of the built landscape, which will define the character of The Energy Corridor District.

The design of the paths to a large extent is the design of the place. In high quality places, no path is above its place. For communities in transition, there is likely a complete street design that could better support its context and further advance the vision towards becoming a great place.
Access and Mobility

Most people acting rationally and in their own self-interest want to travel from point A to point B faster rather than slower. However, in a place that wants to be high-quality, what is rational and in one’s self-interest, multiplied by everyone doing the same thing, results in damage to the whole—the proverbial tragedy of the common. The same applies to the idea of driving cars quickly and over long distances.

This does not imply that high volume streets are bad. Rather, rewarding high travel speeds and long trip lengths is unhealthy. Great places can have high volume streets. In fact, America’s cities used to have wonderful downtown arterials that were home to theatres, department stores, dense housing, and civic buildings. They were the best addresses in town with vibrant pedestrian activity and social and economic exchange. Many had transit services. They had the highest rents and were central to city life. Unfortunately, the nature of the arterials and their markets were damaged through incremental conventional changes to speed them up for motorists, reducing vibrancy in urbanized areas and exporting value to outer suburbs.

Modern Conception of Purpose of Streets

Traditional Conception of Purpose of Streets
Eldridge and Enclave Today

Proposed Long-term Eldridge and Enclave Alignment Concept
Existing Conditions

Eldridge Parkway is an incomplete street and is six lanes wide north of Memorial Drive and four lanes wide south of Memorial Drive. The master plan proposes to change Eldridge Parkway into an attractive four-lane complete street. The intent is to change the parkway into a multimodal, slower, safer, and more attractive street that is a great address for a mix of land uses. The outer motor vehicle lanes are one foot wider than the inside lanes to facilitate transit vehicles. The focus of the proposed redesign of Eldridge Parkway is on improving access and returning the street to a prime address in The Energy Corridor.
Eldridge Parkway Phase 1

The first phase of the transformation of Eldridge Parkway into a complete street is the construction of the identified separated pedestrian and bicycle facilities south of Memorial Drive to Briar Forest Drive and beyond, as deemed appropriate. The existing four-lane street section coupled with the proposed infrastructure and beautification improvements will create a pedestrian-scale environment where it is safe, comfortable, and convenient to move through The Energy Corridor on foot or by bike. The most important connection in this phase is to the Buffalo Bayou trail system.

The Eldridge Parkway concept is somewhat like the Indianapolis Cultural Trail, in Indianapolis, Indiana. On this eight-mile network of pedestrian and bicycle paths through downtown Indianapolis, the bikeways are eight feet wide and are separated from the pedestrian zone by street furniture and a landscape buffer. The width of the pedestrian space varies, but is generally greater than 15 feet wide. The facilities are augmented with significant wayfinding signage to help direct pedestrians and bicyclists to their destinations.

Where there are bus stops, the bicycle facility should be routed to be next to the sidewalk as shown in the section. This is a typical design for any bus stop in The Energy Corridor District that involves separated bicycle facilities.
Proposed Eldridge Pathway Section: Bus Stop
Street Design Components

Street Lighting

Lighting is intended to provide public safety while enhancing the character of The Energy Corridor. Tall fixtures should light the street while pedestrian scale fixtures should illuminate the sidewalk and bicycle paths. Fixtures should relate to each other to contribute to a coordinated identity for The Energy Corridor District.

Build-to and Setback Lines

To create the desired pedestrian scale and active streets, build-to lines should be identified in addition to setback lines. Along Eldridge and other streets it is critical that redevelopment be oriented to the street frontage rather than setback in a parking lot. A build-to line will ensure buildings and active uses address the street and parking moves to the rear.
Low-impact Design

The landscape zones along the street should all be designed to capture stormwater and reduce the amount of runoff going into the city system. In addition, landscape should consist of native species that do not require regular irrigation minimizing potable water use.

Street Trees

Street trees are a vital element to the success of Eldridge as a pedestrian- and bicycle-friendly environment. Given the climate, shade is important to the comfort of users. The design calls for a continuous double row of trees on each side of the bicycle path, which will shade the path as well as the sidewalk. Trees should be spaced to form a continuous canopy as they mature.
**Eldridge Parkway Phase 2**

The second phase of the project calls for the removal of the channelized right turn lane from Eldridge Parkway to Memorial Drive and the construction of a two-way separated bike lane on the north side of Memorial Drive. From field observation, motor vehicles drive excessively quickly in the channelized turn lane. Debris from crashes and tire damage to the curb and sidewalk reinforce the lack of comfort in the area for pedestrians and cyclists. Slip lanes in general, where motorists don’t need to slow down or stop before making a turn, are detrimental to the quality of the pedestrian environment and are not recommended anywhere in The Energy Corridor. Even if pedestrians have the right-of-way according to traffic signals or other means, the geometry and the driver expectations of slip lanes encourage high speeds and discourage people from walking or cycling. Furthermore, the slip lane and the proposed Memorial Drive bicycle facility are incompatible. The slip lane would cross the bicycle facility’s path in an uncontrolled way and result in a high potential for a head-on collisions between eastbound bicyclists and right-turning vehicles.

In the short term, the existing crossing island and the slip lane can switch places, and motorists can continue to make right turns next to through-moving traffic. The new tighter turn radius will slow motorists and provide higher quality pedestrian space at the intersection. In addition, the installation of a two-way separated bike lane on Memorial Drive (through lane diets and the utilization of the landscape easement) during this phase will densify the existing low-stress bikeway network in The Energy Corridor, providing another safe east-west bicycle route beyond the scenic beauty and convenience afforded by the Buffalo Bayou trails.

**Eldridge Parkway Phase 3**

The next phase of the project is the construction of the street parallel to Eldridge Parkway along the west side of Terry Hershey Park from Enclave Parkway to Interstate 10. This new street will provide improved routing options for all road users, in addition to providing the ability to restore Eldridge Parkway to four-lanes and make it a complete street between I-10 and Memorial Drive.

**Eldridge Parkway Phase 4**

With the completion of a parallel road in Phase 3, Eldridge Parkway between Memorial Drive and I-10 should be narrowed to four vehicular lanes. When narrowing is complete, the entire length of Eldridge Parkway will have four through lanes. This road diet will provide the space necessary to continue the pedestrian and bicycle improvements from Phase 1 along Eldridge Parkway, seamlessly connecting the entire corridor with low-stress bicycle and pedestrian facilities. While these facilities are being constructed, the intersection of Memorial Drive and Eldridge Parkway should be reconstructed as shown on the following page. The proposed intersection geometry, which has been proven effective worldwide, provides increased protection to pedestrians and bicyclists. Phase 4 also should include a separate traffic signal cycle for bicyclists and pedestrians, allowing convenient turns from the Eldridge Parkway sidepaths to the Memorial Drive two-way separated bike facilities.
Eldridge-Enclave Proposed New Section
South of Terry Hershey Park
Eldridge-Enclave Proposed New Section at Terry Hershey Park (two-lane)
Eldridge-Enclave Proposed New Section
North of Terry Hershey Park
Intersection Design

The proposed Eldridge Parkway section successfully separates vulnerable road users, (i.e. pedestrians, and bicyclists) from faster and heavier motor vehicles by using a series of landscaped buffers. The buffers provide physical separation. The street trees provide the necessary shade as pedestrians and bicyclists travel to their destinations. The combination of the buffer and the cooling effect of the shade increases comfort dramatically. Additionally, the added trees at the street edge enclose the roadway, reducing driving speeds. The proposed section acknowledges that pedestrians, bicyclists, and motorized vehicles travel at different speeds. Separating their paths is a very effective way to keep everyone safe and comfortable.

The planned separation of pedestrians, bicycles, and motor vehicles informs the design of the Eldridge/Memorial intersection. The proposed design separates road users into different spaces and, through signalization, allows the road users to cross the intersection at different times, keeping everyone safe. There are many unique aspects of the design, but the most important one is the corner refuge island at each intersection corner that reduces the turning radius, slowing motorized traffic while providing protected space for bicyclists to wait to cross the street.

Another important feature of the intersection design is moving the stop bar back, improving the ability for motorists to see pedestrians and bicyclists crossing the street.

This intersection design provides added protection to vulnerable road users, conveniently allows bicyclists to transition from one bicycle facility to another, and greatly reduces the likelihood of turning conflicts between pedestrians, bicyclists, and motorists.
Importance of New Streets

With a parallel street, the Eldridge Parkway phasing will occur as discussed previously. However, if a parallel street is not constructed, then the proposed intersection at Memorial Drive and Eldridge Parkway will not occur because a narrowing of Eldridge Parkway becomes infeasible. While pedestrian and bicycle facilities in the landscape easement are better than no pedestrian and bicycle facilities at all, the goals of this project extend beyond just adding facilities to changing the character of the street itself, making it more inviting, safe, and comfortable. The parallel street makes the Eldridge Parkway narrowing between Memorial and I-10 feasible—reducing crossing distances for pedestrians and making the public space more intimate, engaging, and safe for all road users.
Intersection Design Elements

1 Bicycle Crossing
The dedicated crossing reduces conflict with pedestrians and allows better movement through the intersection.

2 Bicycle Stop Line
The stop line at the edge of the travel lane provides bicyclists with a head start across the intersection from turning vehicular traffic.

3 Bicycle Queuing Area
The queuing area provides bicyclists a waiting area separated from pedestrians to ease flow and improve travel.

4 Corner Deflection Island
Islands reduce the vehicle turning radius and slow traffic to improve safety. The design offsets the bicycle crossing from the main path to reduce bicycle speeds at the intersection.

5 Pedestrian Ramps
Ramps to the street level and queuing area maximize accessibility to all pedestrians.

6 Pedestrian Crossing
The location reduces overall crossing distance to make streets easier to cross as well as increases safety through high visibility.

Eldridge/Memorial Intersection