# **RECOMMENDATIONS TO CODENEXT:**

## PEDESTRIAN ADVISORY COUNCIL AND BICYCLE ADVISORY COUNCIL

### INTRODUCTION

The Pedestrian Advisory Council (PAC) and Bicycle Advisory Council (BAC) work to ensure that pedestrianism and bicycling achieve due consideration in public and private development, as well as in policies, programs, and design throughout Austin. While all the groups retain individual priorities and work plans, there are significant overlaps in the groups' missions. It is for this reason that the groups' membership have convened to identify obstacles of the current Code and opportunities for the new Code in order to accomplish land use policies supportive of pedestrianism and bicycling within Austin.

Moreover, the Pedestrian Advisory Council and Bicycle Advisory Council are Associated Entities for the City of Austin charged with advising the City on projects and policies impacting the pedestrian and bicycle realms. CodeNEXT represents an incredible opportunity to influence the urban form for the City of Austin and to realize the community goals articulated within the *Imagine Austin Comprehensive Plan*. It is for this reason, therefore, that the Pedestrian Advisory Council and Bicycle Advisory Council submit the following as formal recommendations to CodeNEXT for consideration.

We appreciate the chance to provide this input. We also request to be further involved as critical stakeholders to achieving a compact and connected Austin as we undertake to revise the Land Development Code.

## VISION

Development in Austin has for decades been governed by policies and land use regulations which result in automobile dependency. Austin's Land Development Code is similar to other cities' land development regulations in that regard, and suburban sprawl is perpetuated through provision of large lots, single-use zoning, copious parking requirements, lack of connectivity requirements, large block sizes, etc.

The *Imagine Austin Comprehensive Plan*, adopted in summer 2012, represents a fundamental turning point for Austin. Extensive public involvement resulted in a plan for the City embracing principles of sustainability, affordable housing, and creative arts, among others. Overwhelmingly, however, the public ranked the Invest in a Compact and Connected Austin Priority Program as their top priority among the various community priorities.

Our organizations agree with the Austin community and embrace the *Imagine Austin Comprehensive Plan*'s vision to grow in a compact and connected manner. To develop according to the principles of compact and connected further supports the vision of *Imagine Austin* to expand transportation choices (City of Austin, p. 6),<sup>1</sup> develop and maintain household affordability, create a healthy Austin, sustainably manage our water resources,

<sup>&</sup>lt;sup>1</sup> Expanding Transportation Options is the 2<sup>nd</sup> of 6 Key Challenges and Opportunities identified within *Imagine Austin*.

and use green infrastructure to protect environmentally sensitive areas.<sup>2</sup> The Priority Programs work together and begin with a land development philosophy codified in the Land Development Code. In fact, the entire rationale for revising the Land Development Code is the recognition that our current Code simply *cannot* achieve the community's goals envisioned within *Imagine Austin*. Because a compact and connected city is a primary driver for achieving many goals of *Imagine Austin*, because walkers and bikers are key indicators for compactness and connectedness, and because users of all transportation modes are pedestrians at some point, our groups are critical stakeholders for success in revising the Code.

Walkable and bikeable environments can be achieved following a set of seven Ds<sup>3</sup> that influence the form and function of cities as well as how space is used and perceived. In making the following recommendations for new standards within the Code that support walking and bicycling, we will largely follow these tenets. We also offer recommendations for improving the development process to enable a more walkable and bikeable community, as well as several observations to development that connect directly with the Transportation Criteria Manual revisions, included as an appendix.

## **S**TANDARDS

The Original 3 Ds posited by Cervero and Kockelman (**density, diversity, design**) are wholly consistent with the compact and connected vision of *Imagine Austin*. Quite simply, a rich tapestry of relatively dense, well-designed neighborhoods consisting of housing, shops, and other destinations allows walking and biking to occur. While sidewalks and bike facilities are necessary, they alone do not induce walking and biking. The mere infrastructure is necessary but not sufficient. Infrastructure must exist within an urban context making such trips not only technically possible, but likely. For Austin to achieve decreased reliance on the automobiles, we strongly recommend these broad principles to be the core of the new Code:

#### Density, Diversity, and Design

- Increase density. In particular within the *Imagine Austin* centers and corridors. Appropriately increasing the residential density is a prerequisite to creating walkable and bikeable places. Retail and transit are inextricably linked to density, and retail and transit are essential components of walkability and bikeability. Austin currently possesses a relatively sprawled urban fabric and an immature transit infrastructure (sidewalks, protected bicycle lanes, mass transit, and urban trails). Greater residential density is a tool to increase neighborhood vitality and to create more walkable and bikeable neighborhoods.
- **More mixed land uses** throughout the city. Separate land-use zoning types complicate walking and bicycling by imposing time and distance barriers. Many individuals would enjoy a short walk to provide for daily needs such as milk or a book purchase, for example. However, the practice of separating land-uses

<sup>&</sup>lt;sup>2</sup> Priority Programs of *Imagine Austin* begin on page 186 of the Comprehensive Plan.

<sup>&</sup>lt;sup>3</sup> Influences to the built environment have been described with words beginning with D. Robert Cervero and Kara Kockelman posited the original "three Ds": **Density, diversity,** and **design** (Cervero & Kockelman, 1997). These were followed later by **destination accessibility** and **distance to transit** (Ewing & Cervero, 2001; Ewing et al., 2009). **Demand management**, which includes parking supply and cost, is a sixth D. **Demographics** are sometimes included as a seventh D (Cervero & Kockelman, 1997) but will not be included within these recommendations.

renders such conveniences practically impossible throughout much of the city because these services or destinations do not exist within walking distance. More mixed land uses would increase proximity of services and destinations and increase the feasibility to arrive in a way other than by personal automobile. Greater mixing of land uses enables housing affordability and can reduce vehicle miles traveled, thereby enhancing the environmental well-being of Austin. A consideration to the building form, scale, and design treatments through a form-based code can more easily provide a walkable and bikeable environment.

We recognize that there are appropriate times for separation of land uses and appreciate concerns regarding neighborhood compatibility. Traditional zoning should be maintained to the extent that it provides for reasonable separation of uses that would otherwise impair the health, safety and general welfare of the community. The location of a noisy industrial concern is not an appropriate use nearby residences.

- Increase infill options. To support city-wide goals for affordable housing and proximal access to businesses and services, we recommend allowing 'by-right' infill options throughout the city. 'By-right' infill options reduce the burden to individual neighborhoods to accommodate the projected population growth of Austin. 'By-right' infill options further reduce the cost of development and can assist in affordable housing. Although some existing infill tools have not proven to be successful in their current form (such as corner stores), we recommend consideration be given to how various tools might be modified for improved performance.
- Great streetscapes. The Great Streets Program has produced high-quality pedestrian- and bike-friendly
  environments throughout downtown. We recommend the new Land Development Code perpetuate these
  standards as well as the complete and green street standards.<sup>4</sup>
- Provide for alleys. Alleys aid in efficient provision of services and can enable smaller front yard setbacks, which encourages community interaction and a more hospitable pedestrian realm along the street. We recommend the Code allow for/require alleys and prohibit the vacation of alleys. The installation of alleys must align with other alleys to form a network.
- Require trees along certain streets or development types. The Land Development Code must support
  provision for tree plantings along streets. Shaded streetscapes help to make walking and bicycling more
  comfortable and more attractive.
- **Encourage pilot projects for innovative design solutions**. To achieve the goal of context sensitivity in arriving at solutions to problems relating to land development, Austin ought to use small-scale pilot projects. We also recommend the diversity of problems across the city be treated through flexible regulations.
- Shared streets. We maintain that the City must fully develop its sidewalk infrastructure. Decades of
  prioritizing automobile infrastructure has resulted in an inferior sidewalk network often lacking ADA
  compliance, a nearly \$1 billion prospect.<sup>5</sup> But, there may be opportunities to use shared streets in several
  contexts. First, planned unit developments (PUDs) and planned development agreements (PDAs) have the

<sup>&</sup>lt;sup>4</sup> A complete Streets policy was adopted by City Council on June 12, 2014. The green streets elements of Imagine Austin are embedded within this policy.

<sup>&</sup>lt;sup>5</sup> City of Austin Public Works Department staff.

unique opportunity to design and incorporate shared streets from the outset as a master planned development.

Second, through the neighborhood planning process, neighborhoods may elect to transition streets to become shared streets.

Third, redevelopment projects with sufficient street frontage may have opportunity to re-purpose a street.

In places where shared spaces are allowed, we recommend high-quality design standards to achieve pedestrian- and bike-friendly places. Figure 1 illustrates a successful shared street.

Figure 1. A living street or shared street creates a safe shared space for all people by slowing vehicle traffic.



- **Crime Prevention through Environmental Design (CPTED).** Building, landscaping, and lighting standards can improve the safety and comfort of pedestrians and bicyclists.
- Trail-oriented development. To encourage development able to make use of green spaces and urban trails,<sup>6</sup> development regulations must address specific needs regarding opportunity to develop without street frontage. Trail-oriented developments must also address connectivity, lot sizes and design standards.

#### **Destination Accessibility**

**Greater emphasis on connectivity within and between neighborhoods and large-scale projects**. We recommend consistent connectivity standards, as envisioned by *Imagine Austin*'s Compact and Connected Priority Program, be enforced through all development types (subdivisions, site plans, planned unit developments (PUDs), commercial, multifamily, etc.) and small blocks be provided through regular spacing of streets and/or pedestrian and bicycle connections through developments. Too often, large-scale development forces pedestrians and bicyclists to travel around the perimeter, either by lack of direct connections or by outright barriers such as fencing. We recommend strengthening and applying more

<sup>&</sup>lt;sup>6</sup> Austin is developing an Urban Trails Master Plan. A new conservation subdivision type is also in development as part of City of Austin's efforts to revise the Subdivision Regulations.

generally the Pedestrian Path Requirements within the Land Development Code<sup>7</sup> as well as greater application of Subchapter E-like requirements for all development types to ensure access between and through single- and multi-family neighborhoods, large commercial centers, parks, to transit, etc. Figure 2 illustrates the use of a pedestrian easement to enhance connectivity within a single-family neighborhood.

Figure 2. A pedestrian easement enhances connectivity between Capstone Drive and Doswell Lane. It also connects to Clayton Elementary School.





Photo credits: Google Earth

Planned Unit Developments (PUDs) and Planned Development Agreements (PDAs). PUDs and PDAs offer greater flexibility in the development process. Importantly, because they do not develop according to standards within the Code, they are supposed to assure standards are met or exceeded.<sup>8</sup> We offer several observations regarding alternative development scenarios. First, often PUDs and PDAs do not achieve the intended aim of higher quality development because there are no clear standards for approving these projects. In other words, it is unclear when superiority has been achieved given the necessary tradeoffs inherent in ad hoc negotiations. We recommend criteria be established for these alternative development scenarios requiring high standards for walking, bicycling and connectivity.

Second, because PUDs and PDAs are approved by Council (all zoning cases are approved by City Council), many times changes are made on the dais nullifying the time and effort of staff and developers negotiating the specific points of agreements. We recommend limiting the number and/or types of changes that can be made on the dais.

Third, the complexity of the current Code encourages reliance on alternative development strategies. For instance, 11.29% of the city is zoned PUD.<sup>9</sup> The overabundance of alternative development approaches magnifies the problems associated with them.

<sup>&</sup>lt;sup>7</sup> § 25-4-153C Pedestrian Path Requirements

<sup>&</sup>lt;sup>8</sup> <u>http://www.austintexas.gov/faq/planned-unit-development-pud-what-it</u>

<sup>&</sup>lt;sup>9</sup> Staff reported 11.29% of land is zoned through PUD. <u>ftp://ftp.ci.austin.tx.us/GIS-Data/planning/maps/Major%20Zoning%20Districts.pdf</u>

- **Subchapter E:**<sup>10</sup> Expand block design standards so they apply to development types other than commercial development. Block design standards improve emergency service response time, are more cost-effective in infrastructure and service provision, and enhance health and safety. Currently, Subchapter E applies only to "commercial" projects and so does not apply broadly enough to capture the multitude of development projects that warrant this level of design consideration. We recommend applying block design standards across the entire city, allowing for exemption for topography and environmental constraints.

Staff have observed, too,<sup>11</sup> that it may be prudent to consider sidewalk and building placement separately within Subchapter E.

- **Sign regulations.** Wayfinding for pedestrians and bicyclists must incorporate national best practices and expand and refine the ideas contained within the Downtown Austin Wayfinding Master Plan. Signage must be provided that is geared specifically for pedestrians and bicycling, keeping in mind placement, height, destinations and facilities for travelers using non-vehicular means. Signs must not impede sidewalks or bike lanes and ought to avoid visual clutter.
- Condominium regimes. Condominium regimes are exempt from requirements to adhere to Subdivision Regulations according to state law.<sup>12</sup> As such, there are no requirements for sidewalks, connectivity, etc. that occur with streets constructed according to city standards. We recommend requiring site design for condominium regimes and recommend ensuring standards for walkability and connectivity through site design process.

#### **Distance to Transit**

The synergies of walking, bicycling and mass transit require coordination. The Land Development Code must put in place standards to achieve City of Austin goals for public transportation. Special opportunities exist within a ½-mile radius of transit corridors and stations to encourage a great mix of residential and commercial uses to support lifestyles not dependent on automobiles.

The Land Development Code must further anticipate the expansion of Austin's rail network and provide Code requirements for provision of bicycle and pedestrian facilities to and along the rail lines.

- **Density and diversity**. Update zoning to encourage an increase in mixed-use development and an appropriate increase in overall levels of density. Allow for greater diversification of land uses along transit corridors.

<sup>&</sup>lt;sup>10</sup> Subchapter E is a subchapter of the Zoning Code (§ 25-2 of the Land Development Code).

<sup>&</sup>lt;sup>11</sup> Interviews were conducted with multiple City staff from Planning and Development Review, Public Works, Capital Planning, and Austin Transportation. While their insight into standards and process helped to identify our recommendations, our recommendations do not always align with staff observations.

<sup>&</sup>lt;sup>12</sup> Texas Property Code 82.005

- **Design.** As development and redevelopment occurs, require a robust street network to be established consisting of different street types enabling connections throughout the site. Increased connectivity simplifies and encourages public transportation use.
- Ensure pedestrians and bicyclists are able to access public transportation stops with a direct and ADA accessible path. This is particularly problematic as developments are often fenced or gated obstructing pedestrian and bicycle travel. Figure 3 illustrates a pedestrian un-friendly development pattern with fencing along a long block.

Figure 3. A hole has been punched through a fence along a superblock on Rutherford Lane where individuals require access to the transit stop and a supercenter.



Photo credit: Google Earth

#### **Demand Management**

**Parking standards**. Copious vehicle parking requirements increase development costs, impact affordable housing, consume land space, perpetuate auto-dependency, etc. We recommend creating more generalized parking ratios that make it easier for sites to change uses, to take advantage of shared parking coefficients, and to support developments that are less auto-oriented.

We recommend vehicle parking maximums be employed rather than parking minimums.

A recent Code amendment<sup>13</sup> allows for vehicle parking reductions if the developer provides bike lockers, shower facilities, and/or car share facilities. We recommend retaining this amendment to reduce vehicle parking requirements and to consider enhancing the incentive by allowing reductions, too, for pedestrian facilities such as pedestrian connections to nearby transit or creating direct pedestrian connections between neighboring sites. We also recommend differential incentives based on project size.

We further recommend that developments of a certain size be required to provide shower and locker facilities, as well as opportunities for car share.

<sup>&</sup>lt;sup>13</sup> § 25-6-478 Motor Vehicle Reductions General

- **Bicycle Parking.** For projects where a site plan is not required for approval, provision of bicycle parking ought to be required with the issuance of a building permit.

Currently, if a site is changing use and bicycle parking is not already provided, the Code does not require installation of bicycle parking unless there is an increase in vehicle parking (bicycle parking requirements are tied to vehicle parking levels). The Code should stipulate that even if there is no increase in vehicle parking, bicycle parking will be required.

- **Long-term bicycle storage.** We recommend Code requirements for development of a certain size include secure, ground-level, long-term bicycle parking.

## PROCESS / PROCEDURE

- **Code amendments.** Require that all amendments of the Land Development Code be evaluated against the Comprehensive Plan. In order to implement *Imagine Austin*, we must not approve Code updates that conflict with the goals and tenets of the Plan.
- Variances. The Land Development Code does not list sufficient variance criteria for land use commissions to use when considering applications. This places the City and developers at risk for arbitrary and capricious decision-making. It has also had a pernicious effect on development practices as developers routinely seek variances from Code requirements they do not like, find burdensome, or which cost more money. Philosophical opposition, inconvenience, or monetary considerations are never appropriate grounds for the granting of variances to Code requirements, however. (Variances must be limited to unique site constraints, environmental features, etc.) But this is a regular occurrence in Austin. The connectivity requirements of the Subdivision Regulations<sup>14</sup> are a perfect example of this. Figure 4 demonstrates a variance granted to the street connectivity requirements. While the variance was granted ostensibly for trees located west of the development, the neighborhood were vocal advocates against the street connectivity standards within this note. The Code must also establish clear criteria for when and under what specific circumstances variances are allowed to be granted.<sup>15</sup>

We recommend waivers to block length requirements of Subdivision Regulations<sup>16</sup> be a variance request rather than an administrative action.

We recommend an interim review system be implemented while the Code is being revised to ensure that variances being requested undergo a more rigorous review process. But, the new Code must establish high standards by identifying an interdisciplinary Land Use Review team to evaluate for variances within the

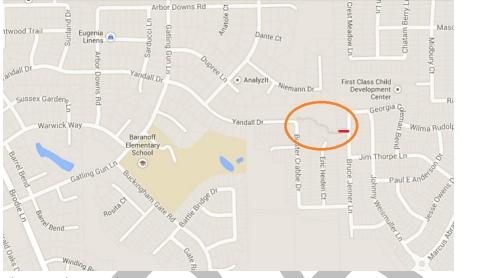
<sup>&</sup>lt;sup>14</sup> § 25-4-151 Street Alignment and Connectivity

<sup>&</sup>lt;sup>15</sup> § 25-4-036 Variance Determination

<sup>&</sup>lt;sup>16</sup> § 25-4-153A Block Length

right-of-way. This can help to achieve the *Imagine Austin* vision as well as to protect against short-term, single-project decisions that interfere with larger City of Austin plans within the right-of-way.

We recommend reducing the amount of variances that can be considered by a land use commission or approved administratively. The allowed variances must have clear standards tied to topography or environmental features, etc. Further, provide greater variance criteria design negotiation in the presubmittal design phase of the development process.



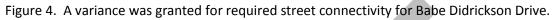


Photo credit: Google Maps

- Alternative Equivalent Compliance (AEC). Current Code allows for an alternate route for development review if proposed project cannot meet current Code. This provides for a built-in process effectively granting a variance without established criteria for when projects even qualify for AEC. Also, there are no established standards or tradeoffs to ensure that the alternative proposed by the developer is actually achieving "equivalent" standards. We recommend developing criteria to determine when projects are eligible to be reviewed under AEC. We also recommend standards for approving projects using AEC.

AECs in core transit corridors tend to work better because they are processed in coordination with the urban design division of the Planning and Development Review Department (for such reasons as to facilitate license agreements for required tree placement in the right-of-way). However, there is a need to improve AEC reviewed along suburban roadways classified as Future Transit Corridors.

- **Sidewalk construction.** New developments perpetuate lack of complete sidewalk network due to the fact that sidewalks aren't required to be built with the road network. Rather, they are only required to be built in front of individual sites with the issuance of a building permit. This can result in a years-long process to construct sidewalks. This is a problem for subdivisions, site plans, planned unit developments (PUDs) s and planned development agreements (PDAs).

In the case of site plans, signs and other streetscape elements are sometimes placed where sidewalks were to be located according to approved plans. These obstacles then become time and financial burdens to city staff in ensuring plans are developed as approved. Figure 5 shows an entrance structure where a sidewalk was shown to exist in the approved plans.

Corner lots are currently required to provide sidewalks on only one side of their development. We recommend sidewalk construction be required for both sides.

Sidewalks must be constructed to be functional facilities for transportation and be built in a straight line wherever possible, avoiding intentional winding for 'aesthetic' considerations or compromised straight paths where driveway curbs offset the sidewalk location. Figure 6 illustrates a recently complete driveway entrance where the sidewalk was unnecessarily offset. Figure 7 illustrates a residential street in Travis Heights which winds around shrubbery.

Figure 5. The Domain signs were placed where sidewalks were shown to exist.



Photo credit: Google Earth

Figure 6. A newly installed driveway on South 1<sup>st</sup> Street altered the straight sidewalk path.



Photo credit: Robert Anderson

Figure 7. A sidewalk in Travis Heights winds around landscaped elements in front of every house.



Photo credit: Robert Anderson

Development must align with adopted master plans.<sup>17</sup> We recommend that Code require the reservation of right-of-way space identified for use in Master Plans. Currently, reviewers are guided to only disallow full use of right-of-way by the development project if there is an active capital improvement project. This works against long-range plans. For instance, the new Bicycle Master Plan will need reservation of right-of-way space to install cycle tracks.<sup>18</sup>

<sup>&</sup>lt;sup>17</sup> Master plans of note include the Sidewalk Master Plan, Bicycle Master Plan, Urban Trails Master Plan, future Pedestrian Master Plan, Downtown Austin Wayfinding Master Plan. A full list of Master Plans can be found here: <u>http://austintexas.gov/page/city-austin-master-plans</u>

<sup>&</sup>lt;sup>18</sup> A key feature of the Bicycle Master Plan update currently underway is the inclusion of protected bicycle facilities. Whereas the current Bicycle Master Plan provides for bicycle lanes, the Plan update would have greater implications for right-of-way needs.

- **Traffic impact analysis.**<sup>19</sup> Development must address multi-modal enhancements. The new Code can and should incentivize transit, pedestrian, bicycle and site design improvements over vehicular improvements. For instance, allowing for installation of bus stop improvements, pedestrian hybrid beacons or cycle tracks.

The City of Austin should consider lower thresholds for triggering traffic impact studies/street enhancements. The current threshold of 2,000 trips per day is too high.

Also, modify procedures to provide for Pedestrian Hybrid Beacon or signalized intersections without requiring a warrant, which is not granted without a demonstrated demand. Of course, with no possible crossing point and a generally inhospitable pedest-rian environment, no such demand can be shown.

Americans with Disabilities Act. The Americans with Disabilities Act doesn't differentiate between new construction and remodel. We recommend requiring developers sign an acknowledgement recognizing their need to be in full ADA compliance to be verified by a "registered accessibility specialist" for projects \$50,000 or more. This won't add to regulations, but help to enforce existing state regulations.

The current permit review process doesn't consider whether a sidewalk is ADA compliant. If a sidewalk exists at all, no further requirements are made of the developer. We recommend requiring assessment of ADA compliance of adjacent existing sidewalks (with correction of non-compliance, if needed) as a requirement of the permit.

Definition of remodel. Currently, significant remodels do not require compliance with current Code for such things as sidewalk construction, transparency requirements, furniture zones, etc. We have observed instances where structures have effectively been rebuilt but are not required to comply with Code simply because they are retaining the same building footprint. Remodels may also have too much parking. We recommend a clear definition of 'remodel' to require Code compliance for projects of a certain type. Figure 8 depicts a site where the definition of a remodel allowed a building to be re-built from the slab without complying with Austin Transit Oriented Development streetscape standards that would have required a sidewalk to be constructed, a 7' wide planting strip to be provided and the installation of trees in the right of way.

Figure 8. "Remodel" of Qui restaurant which failed to produce sidewalks, trees or deal with the utility pole placement among Comal Street.



Photo Credit: Google Earth

<sup>&</sup>lt;sup>19</sup> § 25-6-3 Traffic Impact Analysis

- **Sidewalk fee-in-lieu.** The current fee-in-lieu system allows developers to determine whether to construct sidewalks or to pay into the fund.<sup>20</sup> We recommend mandating construction of sidewalks for subdivisions and site plans and requiring a variance process for developers if they wish to pay into the fund instead.
- **The Code ought to stipulate that money to be designated for the burial of utilities.** The existence of above-ground utilities impedes walkability. Requiring utilities to be buried will help to implement the recently adopted Complete Streets policy.<sup>21</sup>
- **Heightened regulations must trump in instances of inconsistency or conflict** between documents such as the Transportation Criteria Manual and Land Development Code. Formatting of the Code and education of staff should take place to ensure heightened regulations are enforced when requirements conflict.

<sup>&</sup>lt;sup>20</sup> § 25-6-354 Payment Instead of Sidewalk Installation

<sup>&</sup>lt;sup>21</sup> Complete Streets Ordinance No. 20140612-119, available at <u>http://www.austintexas.gov/edims/document.cfm?id=211844</u>.

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## Appendix A – Transportation Criteria Manual

Through the process of identifying recommendations for the Land Development Code revision, several recommendations were identified that may have implications for the Land Development Code or which may be appropriate for revisions being made to the Transportation Criteria Manual.

- **Complete and green streets.** Ensure revision to the Transportation Criteria Manual provides for complete and green street cross sections as per *the Imagine Austin Comprehensive Plan* for use under the Land Development Code as well as within Specific Area Regulations.
- **Railroad crossings.** Where streets and/or bicycle lanes intersect railroads, they should be done at right angles are as near to as possible to ensure safety of pedestrians and bicyclists.
- Street materials. Address water quality and green street standards identified in *Imagine Austin* materials by identifying materials which are permeable. Ensure rain gardens and permeable materials for green streets and parking lots and/or driveways do not conflict with design standards for bicycle lanes, provision of sidewalks and ADA requirements.
- **Driveway design and placement.** Update design and placement requirements to differentiate between different environments (urban, suburban, highway, local).<sup>22</sup>
- **Transportation Impact Assessments (TIA).** The transportation impact analysis tools must be updated to include transit, bike and pedestrian levels of assessments (LOS). This may mean not only assessing when existing infrastructure is over-capacity, but that the infrastructure is itself deficient.<sup>23</sup>

Update the TIA Analysis and Improvement requirements to incentivize transit, pedestrian, bicycle and site design improvements over vehicular improvements.<sup>24</sup>

- Safe street crossings at bus stops. In order to provide for safe crossings and to encourage use of public transportation, we recommend developing strong criteria for locating controlled crossings nearby bus stops. Capital Metro and Austin Transportation Department can address this through process. Additionally, these facilities could be addressed through multi-modal enhancements provided through the development process, as addressed earlier in the note.

<sup>&</sup>lt;sup>22</sup> § TCM 5.3.0 Driveways

<sup>&</sup>lt;sup>23</sup> § TCM 2.3.4 Capacity Analysis and Traffic Impact Assessment

<sup>&</sup>lt;sup>24</sup> § TCM 2.3.5 Recommendations on Roadway Improvements and Traffic Control Modifications. This regulation exists within the TCM, but there are definite implications for project-specific requirements through the land development process.