



CITY OF AUSTIN
DESIGN COMMISSION

INTERIM

INFRASTRUCTURE DESIGN GUIDELINES



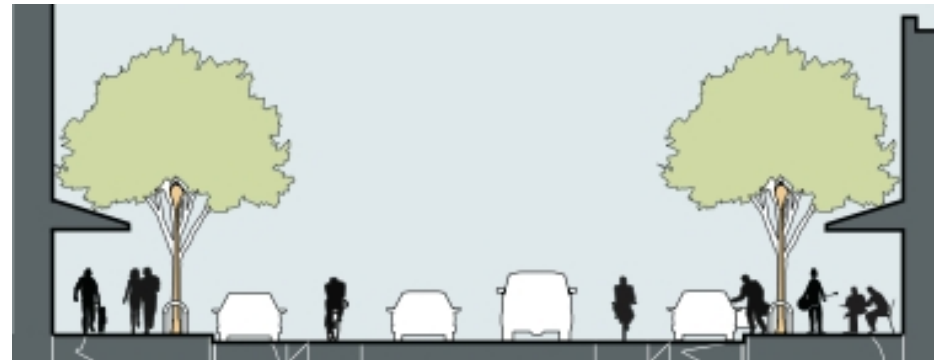
Mueller Water Tower



Seaholm Bridge (proposed)



Seaholm Wall (proposed)



Great Streets

Introduction

The Design Commission provides advisory recommendations to the City Council on matters pertaining to the quality of proposed urban development, and as requested by the Council, assists in developing public policy and in promoting excellence in the design and development of Austin's built environment. In our capacity as stewards of Austin's built identity, Council has asked the Design Commission to broaden its scope to include policies and standards for the design and review of the infrastructural components of our city. This Manual of Infrastructure Design Guidelines is meant to complement both the city's Urban Design Guidelines, and the Imagine Austin Comprehensive Plan. The Infrastructure Design Guidelines address the design character and construction of components and systems that structure and support the ongoing development and growth of the City of Austin and aim to enable the City to attain its vision of becoming the most livable city in the country. Design excellence in infrastructure contributes to sustainable growth and supports Austin's civic identity.

What is Infrastructure?

Infrastructure can generally be defined as the set of interconnected structural components that provide the necessary supporting framework for urban development. Typically referring to the technical structures that support a society's needs, such as roads, bridges, water supply, sewers, electrical grids, telecommunications, and so forth, infrastructure is comprised of "the physical components of interrelated systems providing commodities and services essential to enable, sustain, or enhance societal living conditions." [Fulmer, 2009]. The Design Commission is primarily concerned with achieving excellence in the design of such structures and systems.

Infrastructure plays two primary roles in the design of urban environments: performative, and connective. Performative in this context refers to the capacity of the infrastructure to accomplish the technical function for which the system has been designed, be it the distribution and collection of water, electricity, transportation, etc., or the provision of systems of public space, streets, sidewalks, etc. Performative standards and criteria are the purview of City Staff and City Departments. Connective refers to the ability of infrastructure to integrate disparate urban development components and projects into an integrated system.

Because of Austin's extraordinary rapid growth and its focus on becoming a more "compact-and-connected" city, the need for new infrastructure to support new development has increased as well, almost becoming out of control. To ensure that these infrastructure projects do not have an adverse effect on the public realm, and that they are integrated into the concept of smart growth, the City Council passed Resolution 20100819-035, which assigned the Design Commission to develop guidelines for these infrastructure projects. This document will be quite similar to the Urban Design Guidelines produced in 2009, and will reflect many of the visions of the Imagine Austin Comprehensive Plan, which was adopted in 2012. The Manual of Infrastructure Design Guidelines (IDG) will provide the necessary framework for all future, applicable public infrastructure projects with the goal of enhancing Austin's quality of life. The IDG focuses on projects that have a significant impact on the public realm and will build on values expressed in the Urban Design Guidelines and Imagine Austin Comprehensive Plan.

Connective also refers to the socially supportive role that infrastructure may play in enhancing the quality of life of the citizens of Austin. The Design Commission seeks to work with and advise City Staff, City Departments, and developers on ways to attain excellence in the design and integration of the physical and social systems of our city.

The Infrastructure Guidelines outline the vision, principles and connective design criteria that are required for the design of our city's urban structure. The Infrastructure Design Guidelines provide the necessary framework for the design of a compact, connected and sustainable urban environment for Austin. The Design Commission's role in evaluating infrastructure proposals is to ensure that each development project is designed adequately and systematically reflects the values and principles espoused by the framework in order to realize the goals of the Imagine Austin Comprehensive Plan.

The Merits of Integrated Infrastructure

As the City of Austin strives to implement its compact, connected and sustainable agenda for the future, the necessity to integrate the various infrastructural systems that organize, construct and service the metropolitan landscape is of vital importance. The urban environment has become a complex organism requiring the expertise of many professionals, from multiple disciplines, to construct and manage. This complexity is reflected in the multiple departments that are responsible for the various components of infrastructural design within the city. The segregation of technical expertise, into distinct city departments, is a reflection of the segmentation of professional responsibility that has evolved with modern society. This disciplinary separation encourages the use of infrastructural solutions that are designed to solve singular dilemmas, without full consideration of the consequent effect on the totality of the urban environment. The urban landscapes, produced by this disciplinary separation, are comprised of systems of infrastructure that are engineered and implemented to function for individual purposes and are rarely integrated into the type of complex multi-functional systems needed to service the contemporary city.

Best design practices have shown that integration provides benefits that are social, environmental and economic. Planning for land-use development and mobility issues, for example, are often separately considered spatial planning disciplines. However, in practice there is a strong connection between land use issues and mobility factors, these issues strongly influencing each other in terms of livability and the subsequent financial-economic positions of neighborhoods. While optimizing a particular design may satisfy the technical engineering requirements necessary for infrastructure to perform a singular function, the resultant urban landscape is often dispersed, disconnected, and unsustainable.

The construction of a compact and integrated urban environment requires that the design and construction of infrastructural systems be able to operate on several levels. Systems must be both performative and connective. This is best accomplished by assimilating multiple purposes within an integrated system. Integrated infrastructure has the ability to respond to issues of mobility across a range of uses from the pedestrian, to bicycles, automobiles and public transportation, while additionally responding to the ecological needs of storm water mitigation, and the social roles of public space, all within the mechanisms of an integrated system.

10 Core Principles for an Integrated Infrastructure

1 CONTEXTUAL

Infrastructure should be thoughtfully designed and adapted to enhance surrounding neighborhoods and environments.

Context is the physical scale, space and ambience of a place and establishes the built and natural forms within which individual buildings and infrastructure are sited. As such, the design of infrastructure affects the balance between natural ecosystems and the built environment.



2 CONNECTED

Infrastructure should be strategically planned to so as to facilitate multi-modal linkages and pathways through the city.

Infrastructure should be designed bind the districts, neighborhoods and public spaces of the city together so as to create a vital social, economic and ecologically responsible urban environment.



3 INTEGRATED

Infrastructure should be designed to accommodate competing interests in the urban environment.

A well-designed and efficient urban infrastructure must allow for the intensification of functions in the urban environment by providing for the integration of social and technical systems. This requires an integrated approach to design that supports multiple simultaneous programs and functions.



4 COMPACT

Infrastructure should be designed to promote sustainable urban environments.

Infrastructure that supports compact urban development should be designed to sustain a relatively high-density urban environment comprised of mixed land uses. It must provide for an efficient public transport system and be structured to encourage walking and cycling, low energy consumption, and a reduced carbon footprint. A compact urban population, served by suitable public infrastructure will provide opportunities for social interaction, the building of community and increased public safety.



5 SUSTAINABLE

Infrastructure should aspire to improve the quality of life for its citizens, while living within the carrying capacity of the supporting eco-systems.

Sustainable infrastructure provides for environmental, economic, and social equity in the urban environment. The built environment is an extension of the ecological systems that allows for a dense human population to live in a compact area in relative comfort. Sustainable infrastructure practices encompass: low impact development practices to protect water resources, public transportation systems, distributed energy systems, and the provision of wildlife corridors to protect the health of the natural environment.



6 HYBRIDIZED

Infrastructure should be designed for the efficient integration of multiple programs and uses.

Constructing a compact city requires that infrastructure be designed efficiently in order to provide for a multiplicity of uses within a single area. This technique of hybridization can contribute to the activation of urban areas that would otherwise be vacated, and provides for the continuous use of urban space for diverse programs and events.



7 HUMANE

Infrastructure should contribute to the creation of a vibrant public realm with superior public spaces.

The design of infrastructure can either divide communities, or bring them together. Urban Infrastructure performs an important social role in the city, and proper consideration should be given to the role public space plays in the formation of an accessible and civilized urban landscape, one that serves the entire urban population.



8 ECOLOGICAL

Infrastructure should provide for healthy natural environments.

The unification of natural systems into the city helps to soften the impact of a dense cityscape and provides city dwellers with pockets of respite from the activities of urban life. A healthy environment is created through the use of green infrastructure to support communities of plants and animals, transforming parks and water bodies into spaces for community activities. The integration of nature is not only aesthetically pleasing, but also improves the air quality and mitigates heat island effects in the city.



9 TIMELESS

Infrastructure should recognize the historic significance of important buildings and places.

Culturally important places are constructed incrementally over long periods of time. This aspect can reinforce the authenticity of a place while providing the basis for contemporary urban lifestyles.



10 INCLUSIVE

Decisions about infrastructure should be made with the participation of the effected community.

From the seemingly trivial activities of everyday life (e.g. using a plastic bag) to the overtly transformational (e.g. growing the city), citizens have a role to play and a responsibility. It is only through the sum total of individual choices, of individual actions, that change will come about.

Residents and stakeholders must be part of the planning and designing of their cities and their communities. They must also be part of delivering a new vision: by choosing to walk, by engaging each other, by generating awareness, and by demanding higher standards.



