

2012

Ashram Road Corridor Plan



Stefanie Brodie, John Kent, Eugene
McGuinness, Alison Pienta, Maria Roell, Kim
Wadelton

Georgia Institute of Technology

4/11/2012

Table of Contents

- Introduction 3
 - Problem Statement..... 4
 - Methodology..... 4
- Wide Brush | Context 10
 - India 10
 - Transportation 10
 - Poverty..... 10
 - Environment..... 11
 - Ahmedabad..... 11
 - History..... 12
 - City-wide Issues..... 12
 - Planning Issues in an American Context 16
 - Planning Theories..... 16
 - Transportation 18
 - Zoning..... 20
- Intermediate Brush | Corridor 21
 - Project Area 21
 - Riverfront Development 22
 - Transportation 23
 - Metro Plan 23
 - Transit Alternatives..... 25
 - River-Road Connections..... 25
 - Land-use..... 27
 - Current 27
- Fine Brush | Districts and Design 30
 - Strategies 30
 - Pedestrian Infrastructure..... 30
 - Transit Corridor Design 35
 - Case Study: Viaduc des Arts, Paris, France 35
 - District Phasing 36

Land use 38
 Central Business District 38
 Transition District..... 43
 Historic District..... 48
Public Participation 50
References 52
Appendices..... 53
 Appendix A: Social Inclusion 53

Introduction

Ashram Road is a major regional connection and the principal commercial thoroughfare along the western bank of the Sabarmati River in Ahmedabad. The Ashram Road Corridor Study examines the stretch of Ashram Road from the Gandhi Ashram, north of Rishi Dadhichi Bridge, to Ellis Bridge (Figure 1). This heavily traversed corridor carries approximately 12,000 to 15,000 passenger cars during peak rush hours from its intersection with Nava Vadaj Road around Rishi Dadhichi Bridge to its intersection with Netaji and Bhagtacharya Roads around Sardar Bridge (City Development Plan). Commercial land uses south of the Nehru Bridge encourage a high level of activity in this area. Uses at the northern extent are influenced by the Gandhi Ashram and are more residential with some emerging commercial industries.

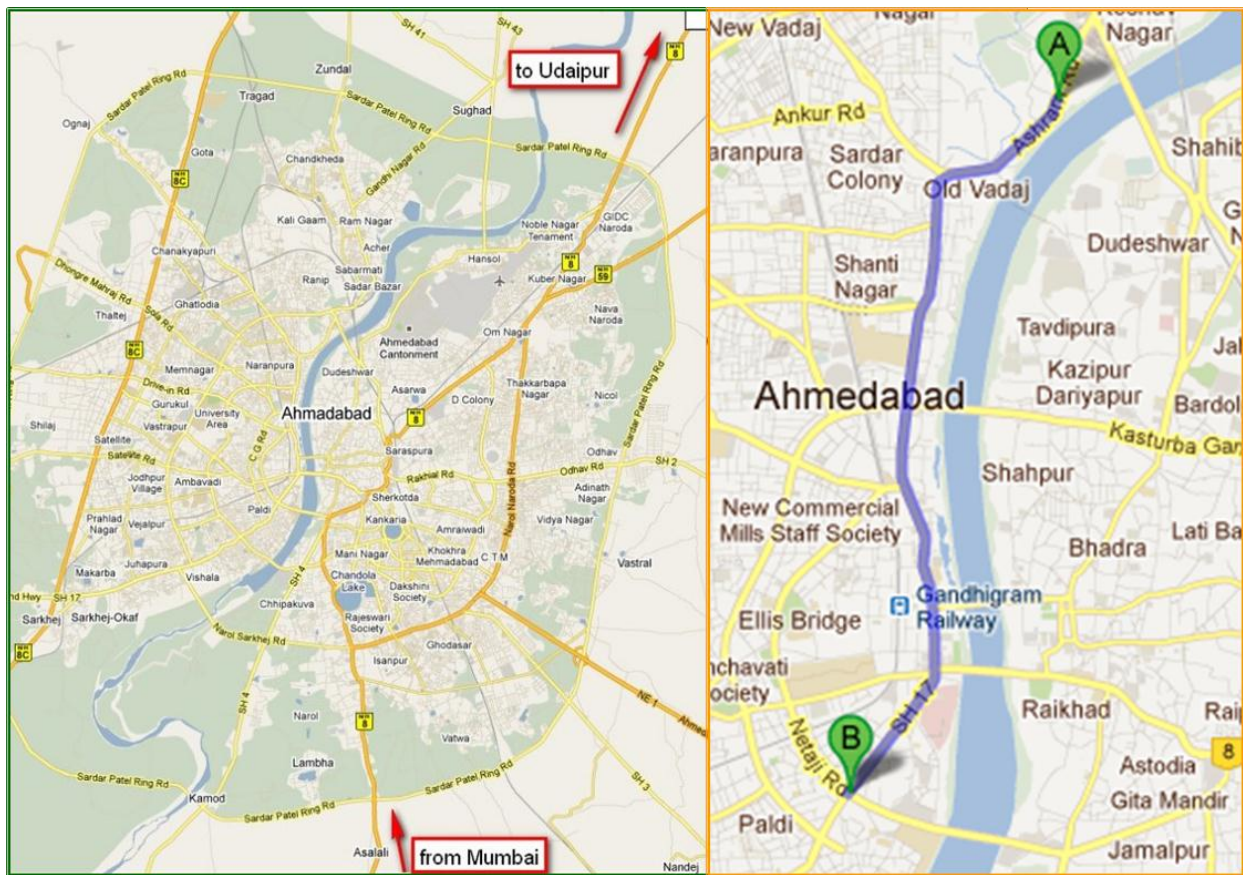


Figure 1 Map of the City of Ahmedabad and Ashram Road

Once a walled city on the eastern bank of the Sabarmati River, Ahmedabad now stands astride the intermittent water body. Recently, the Khari cut canal system was used to dam the river, artificially rendering the river a perennial water body. The Sabarmati Riverfront Development Corporation was established and tasked with the reinvention and reuse of the land area along the river. The redevelopment of the Sabarmati Riverfront is intended to further increase the activity along this corridor.

There have been various plans drafted that involve or relate to the Sabarmati Riverfront, Ashram Road, and the Gandhi Ashram itself. Each of these plans has influenced the direction of the Ashram Road Corridor Study. The plans include:

- The City Development Plan (CDP) – A comprehensive city plan providing the vision for the City of Ahmedabad
- The Riverfront Development Plan – A document detailing the redevelopment of the Sabarmati Riverfront and the direction for future development along the river
- The Bus Rapid Transit Plan – A proposal for increasing public transit in the City of Ahmedabad through the bus rapid transit system
- The Ashram Redevelopment Plan – A vision for the future development of Gandhi Ashram and the property surrounding the ashram grounds
- The Metro Rapid Transit Plan – A proposal for heavy rail metro transit services in the City of Ahmedabad

These plans will be discussed in further detail in following sections. The Ashram Road Corridor Study was defined through careful consideration of these plans and an understanding of the problems resulting from conflicting interests in the project area.

Problem Statement

Ahmedabad has a long history of being an integral Indian city and has recently set the goal of becoming a world class city. The city's industrious and culturally diverse history set the stage for Ahmedabad's current position as one of the country's largest and most influential cities. As such, continued growth is not only inevitable, but desired. The area along Ashram Road from Gandhi Bridge to Nehru Bridge has been identified as an area with high growth and development potential. Along Ashram Road, however, there are areas that may be negatively affected by an intense increase in development and density. These areas are located primarily in the northern portion of the corridor where the Gandhi Ashram and slum villages have a prominent presence. Through policy initiatives, land use restrictions, and physical design solutions, this study proposes that a balance can be struck between desires to create a commercial center and a historic area along the same corridor, incorporating the current context of the project area into the continued growth of Ahmedabad.

Methodology

The project was originally framed during a two week workshop in Ahmedabad, Gujarat, India at the Center for Environmental Planning and Technology (CEPT). During this time, the project team familiarized themselves with the project area, identified the major issues surrounding the area, and defined the problem statement. The preliminary understanding of the project was heavily influenced by the multitude of plans for the corridor area that were developed over the last five to ten years by the state and local governments and CEPT. When these plans were evaluated, they revealed that goals and objectives were in conflict between the plans. The project team identified an opportunity to contribute an integrated synthesis of the proposed plans for the corridor, addressing the goals of each plan while providing a critical, third-party review.

Given the experience in Ahmedabad and the research into each plan that was conducted at CEPT, the project was framed and the objectives were defined through a brainstorming process. The objectives were informed by the planning goals from each plan for the corridor, the general goals of the city and were also influenced by a new understanding of general planning and planning concerns in Ahmedabad and India. Five objectives were identified to guide the project:

- Incorporate the historic significance of the Gandhi Salt March
- Establish connections between Ashram Road and the Riverfront Development
- Plan for future economic development and growth along the corridor
- Explore design alternatives and options for public transit
- Incorporate slum dwellers as stakeholders in the planning process

Each objective would keep in mind the goals of the various stakeholders and the motivations for the proposed policies and project alternatives. As shown in Figure 2, the objectives are interrelated and connected through the incorporation of community involvement.

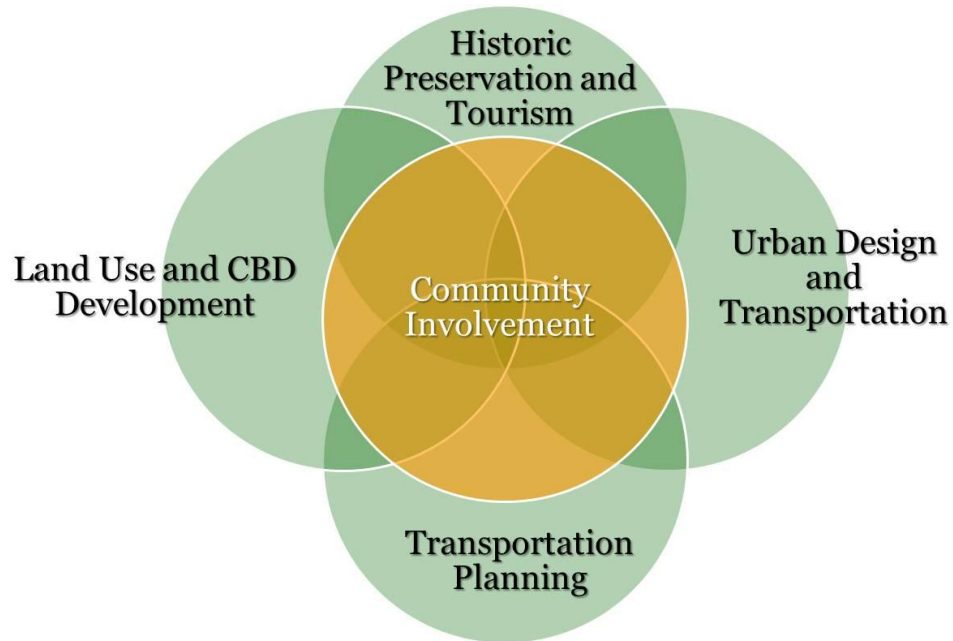


Figure 2 Original framework depicting issues identified along the Ashram Road corridor

Within this guiding framework, project groups were established to further evaluate each of the five objectives. The groups developed approaches to address the key considerations shown in Table 1.

Table 1 Key Considerations Identified for Each Topic Area

OBJECTIVE	KEY CONSIDERATIONS
Historic Preservation and Tourism	o Preserving character
	o Tourism opportunities
	o Educational path along river
	o Broader expansion of Ashram and Salt March history to city
	o Nala Park
	o Bhikhabhai Gardens
Urban Design and Transportation	o Identify current and future physical opportunities
	o Urban design aspects to integrate the two features
	o Pedestrian access
	o Opportunities with proposed and current transit for integration
	o Visual connections
	o Dandi bridge
Community Involvement	o Alternatives should address impacts on slum dwellers
	o Create public involvement plan
	o Discuss affordability goals/plans in context of growth

	o Employment options
	o Identify available schemes for slum dwellers
	o Recommendations for slums
	o How to resettle the moved
Land Use and Economic Development	o Desired/appropriate densities
	o What economic activities are currently going on and what should
	o Funding issues?
	o Establish stakeholders and motivations
	o Identifying other CBDs in the city
	o Green space and recreational uses
Transportation Planning	o Identify alternatives for metro alignments/options
	o Opportunities for connections between river and road at stations
	o 4 lane road along river alternatives
	o 6 lane flyover alternative
	o Pedestrian access and roadway design (on the micro sense)
	o Identify current transit options/transportation
	o Parking

The process of exploring these separate objectives, while fruitful in gaining general knowledge and a deeper understanding of the issues surrounding the corridor, revealed that this approach yields a project scope too large to produce a final deliverable with a measurable impact. Upon this realization, the project was reframed and assumptions about development decisions and directions were made using the knowledge acquired from the research. The five objectives were used to inform a project with a narrower scope that addressed a revised set of primary concerns. These concerns were derived from the previously identified key considerations and include accommodating future growth, balancing growth with historic and housing concerns, addressing transportation needs, and integrating activity on Ashram Road and the riverfront.

The first step in refocusing the project scope was identifying all possible stakeholders. Some of the key stakeholders in the Ashram Road Corridor Study are:

- Business owners and developers – The growth and development of the Ashram Road Corridor would affect property developers and businesses who are looking at the economic growth potential of the corridor. Transportation and infrastructure upgrades and general improvements to the corridor will raise land values and increase the desirability for commercial establishments along the corridor. Those that own property or businesses in the corridor would be most interested in the economic benefits of building up the corridor.
- Residents and slum dwellers – Those that live and work in the Ashram Road Corridor may be displaced or have their lives disrupted by changes proposed in this redevelopment plan. They will likely be interested in having input that will ultimately shape the projects to best meet their needs, such as in the provision of housing, schools, clinics, or other community resources. If slum dwellers are not consulted on housing redevelopment and relocation, they may not accept the new housing as it does not meet their needs or they were not prepared for the relocation or felt they did not have a say in the outcome.

- Ahmedabad Municipal Corporation (AMC) – As the lead development and planning authorities in the city, AMC has interest in assuring the success of the corridor in terms of their goals of environmental remediation and economic development, while providing improved living conditions to current residents. AMC has expertise and technical knowledge regarding large-scale redevelopment projects in the city, such as the Sabarmati Riverfront Development. It is in the interest of these two entities to minimize negative public perceptions of the project, therefore significant interest in minimizing controversy is expected.
- CEPT University – As the leading urban design and planning school in India, coupled with its location in west Ahmedabad, CEPT University's interest in the project is evinced in its studio projects that have focused on redeveloping Gandhi Ashram. In these proposed plans, CEPT has shown great interest in preserving the historic significance of the Ashram area and its low-density surrounds.
- The City of Ahmedabad – Since Ahmedabad is a large city and business center, the majority of residents will use the corridor in some regard and will be affected by the development project. Residents from other areas of the city probably will not be as greatly affected by the project as those located near the corridor, but development of this size in such a heavily used portion of the city will certainly draw interest from the broader community.

Each stakeholder was listed with their perceived primary interests. The stakeholders were then compiled into seven groups: the government, Ahmedabad residents, businesses, developers (METRO and Riverfront Development), the Ashram, slum dwellers, and small businesses (including auto rickshaw drivers and vendors). A matrix was created that determined which interests impacted the majority of each stakeholder group. Weighting was discussed to address greater priority interests or stakeholders. The possibility of using a heavier weight, such as 2 instead of 1, for the slum-dwellers because of their weaker voice in the planning process was suggested. Ultimately, however, a simpler approximation was deemed appropriate due to a lack of deep understanding of slum dwellers in the Indian context.

The interests that were identified fell into 5 categories: transportation, historic preservation, economic development, environmental management, and urban form. The matrix is illustrated in Table 2. Improved waste management, shown in orange, is the interest with the highest number of stakeholders. This is not surprising, since improved waste management is a national interest. Access to employment (including the Metro plan), increase in tourism, addressing of the slums (whether through rehabilitation or relocation), and a creating a sense of place also scored high in stakeholder interest. These interests are all highlighted in green.

Table 2 Prioritized Concerns Identified in First Phase of Study

Interests	Government	Residents	Business	Developers	Ashram	Slum Dwellers	Small Business	Total by Interest
Transportation								
Reduction in Traffic	1			1	1			3
Access to Employment (including Ghandinagar and Ahmedabad link)	1	1	1			1	1	5
Access to Transportation	1	1	1	1		1		5
Access to Education		1				1		2
Historic								
Preservation of Heritage	1	1			1			3
Traditional Lifestyle		1				1	1	3
Support of Traditional Industries		1			1		1	3
Support of Ghandian Ideals		1			1			2
Preservation of Community Social Networks		1				1		2
Economic								
Increase in Tourism	1		1	1	1		1	5
Addressing Slums (rehabilitation, relocation, etc.)	1	1	1		1	1		5
Business Development	1		1	1				3
Increased International Recognition (tourism, industry, business, etc.)	1		1	1	1			4
Flexibility in business regulation							1	1
Environmental								
Conservation of Nature	1			1	1			3
Improved Waste Management	1	1	1	1	1	1		6
Reduction in Sprawl	1			1				2
Urban Form								
Compact City	1			1				2
Sense of Place	1	1	1	1	1			5

In addition to stakeholder concerns, several other key conclusions were drawn from the first phase of the study. A closer review of the plans for the corridor showed that although plans created by CEPT and other entities conflicted at times with government-approved plans, the government-approved plans generally provided a cohesive vision for the corridor. This understanding steered the focus of the project towards working within the government plans, rather than ignoring them, in an effort to incorporate pre-existing ideas and incentives in addressing common areas of concern. These plans also revealed several shortcomings. None of the plans addressed the potential to connect Ashram Road and the Riverfront redevelopment. Pedestrian concerns were also missing from most the plans. As a result, a major contribution of this project will be to address the disconnect in physical space between the river and the street, emphasizing pedestrian-focused planning.

The major assumptions from the initial investigations were that the motivations behind the government plans are to establish Ahmedabad as a world class city, establish a central business district on a major regional corridor, and provide heavy rail for public transportation. These overarching goals guided the future work of this project. Given this new understanding of the project area and the problem to be addressed, a design-oriented approach was taken. Zoning districts and pedestrian design tactics were primarily used to address the concerns identified for the corridor. Planning tools and techniques developed physical connections between the road and the river, while addressing the cities concerns for increasing growth through special zoning districts and design alternatives for the proposed heavy rail metro system along Ashram Road. The ashram’s concerns for preservation and tourism and the concerns of other stakeholders were also incorporated. Figure 3 illustrates the adopted framework.

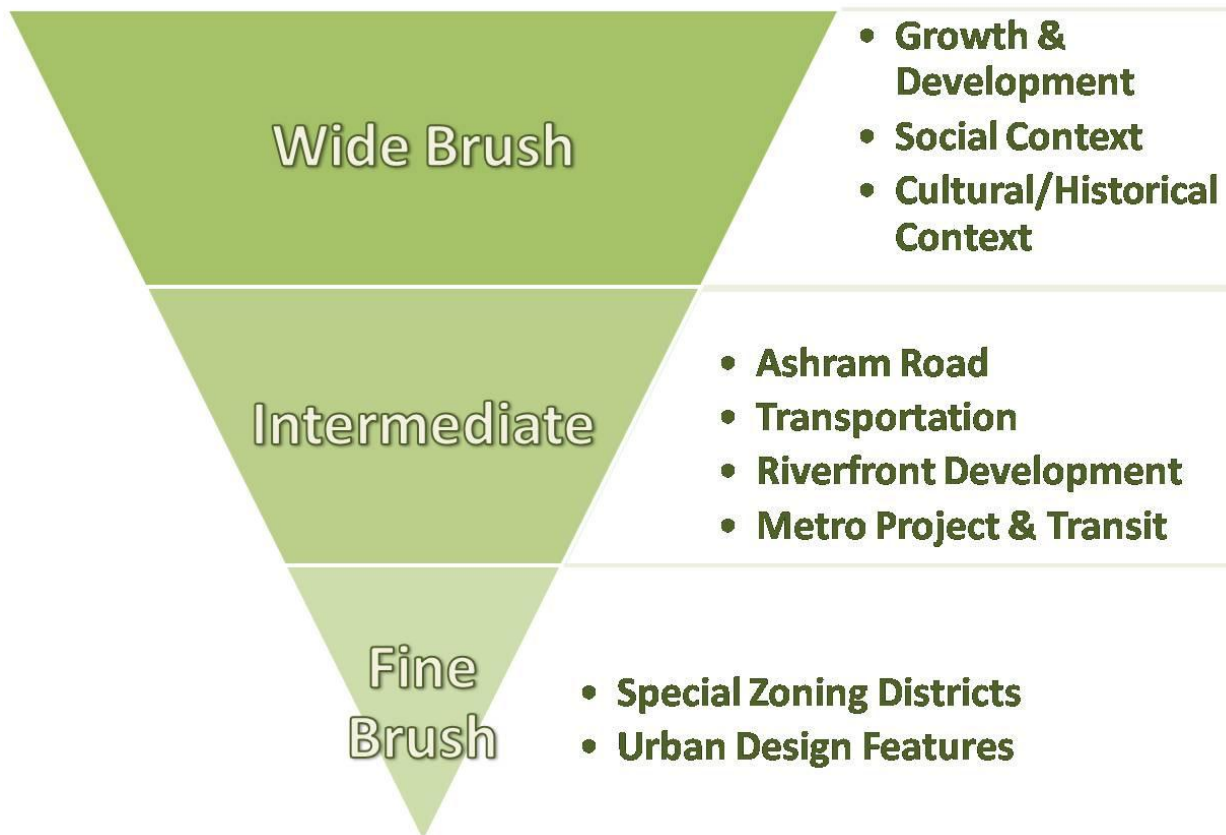


Figure 3 Final framework guiding the evaluation of Ashram Road corridor

Wide Brush | Context

India

There are many attributes which make the nation of India unique. Its history, culture, and traditions all give India its distinctive identity. As American urban planners, it is our goal to accentuate the positive aspects of India while bringing a new perspective to some of its concerns. Our project is specifically concerned with the development of a new Central Business District in the city of Ahmedabad. Coming from a country that developed hundreds of years ago has given us insights into the mistakes that were made in the formation of our own Central Business Districts. Obviously, our American context also limits our understanding of the unique attributes of India. However, this contrast may allow innovation in the plans formed through an outsider's perspective. Some of the primary differences between America and India are their transportation systems, issues surrounding poverty, and environmental issues.

Transportation

American planners planning any kind of transportation in India must take into account some of the aspects of the Indian transportation system indicative of the country. Firstly, using regulatory traffic control devices such as pavement markings has minimal effect. While it is already engrained in American culture to obey these regulations, lax enforcement in India diminishes the impact of traffic control devices. Also, the modal split is very different between the two countries. American streets are used primarily by mid-size vehicles. Indian traffic is more varied with a large percentage of two-wheelers, three-wheelers, bikes, and pedestrians. There are also more animals in the streets in India. These differences can lead to traffic safety concerns and must be included in the planning process.

Poverty

Poverty in India is largely connected to slums. While urban poverty in India is decreasing, India's slum population continues to grow. As of 2000, India's slum population is roughly 170 million (Edelman and Mitra 2006, 27). As of 2001, in cities and towns with populations over 50,000, approximately 15% of the urban population (42.6 million people) lived in slums. These average nationwide figures do not highlight the great differences between the country's cities and states. In Mumbai, for example, 48.8% of people (over 11 million people) live in slums. In Ahmedabad, however, approximately 12.51% of people live in slums (Sivaramakrishnan, Kundu, and Singh, 2007).

The Indian government's policy response to the issue of informal settlements has varied over time. The numerous schemes and government programs have not effectively met the basic service needs of the urban poor or addressed the systemic causes of slum formation. During the first few decades of India's independence, the government's approach was driven by the notion of 'slum-free cities.' This phase was marked by large-scale evictions and demolitions accompanied by resettlement and, in later stages, attempts at rehabilitation. This proved unsustainable because resettlement often meant displacing the urban poor from their sources of livelihood and increasing the financial burden of transportation since the new housing was often situated in the city periphery. At the same time, new settlements would spring up to take the place of demolished ones in the city.

The policies initiated in the 1970s demonstrate that the failure of this approach was eventually accepted. The focus of low-income housing policies was broadened to include slum improvement. The Slum Improvement Program (SIP), Sites and Services scheme, Environmental Improvement of Urban Slums (EIUS), Urban Basic Services Program (UBSP) and National Slum Development Program (NSDP) all reflect a better understanding of the integral nature of slums in the economy of Indian cities. The Indian government recently unveiled its latest national housing scheme, Rajiv Awas Yojana (RAY), which

proposes the government's effort to create a slum-free India. RAY focuses on granting land tenure to slum dwellers as a means of bringing slums into the formal system. It also advises local governments on methods to support slum upgrading and affordable housing development.

Environment

The environmental conditions of America and India are also very different. Some environmental concerns are natural, such as water scarcity and natural particulates. However, many are caused by a lack of infrastructure and India's growing population. Much of India lacks the infrastructure to adequately dispose of their waste. This issue has serious health risks, primarily in highly populated cities. Frequently, water bodies are used informally for waste disposal. This has led to very poor water sanitation, especially in urban areas. Air quality is also a serious issue in India due to emissions from vehicles, industries, domestic fuel burning, and several miscellaneous activities, such as burning household waste and cremation.

Ahmedabad

Ahmedabad is the seventh largest city in India largest city in its state, Gujarat. Located on both banks of the Sabarmati River in North-central Gujarat, the city encompasses 466 Sq. Km and is approximately 32 Kilometers from Gujarat's state capital, Gandhinagar. Ahmedabad is split into two distinct sections. On the east bank of the Sabarmati lays the old city and the west side is the new city, which began to develop in the late 1800's during the British colonial rule. The urban form of the old city consists of a densely packed pol system, which consists of small walled neighborhoods each with their own distinct community. (Source: Theltaj paper)



Figure 4 Ahmedabad, Gujarat, India

History

Although history is more significant to the old, walled city to the east of the river, it is still an important aspect of the new developments on the west of the river. Specifically, the presence of Gandhi's Ashram on the west side of the river where the Salt March began and the river itself is of great historic interest to the city, especially as it seeks World Heritage status.

City-wide Issues

One of the best sources of information on the current state of any city and the issues it faces is its comprehensive plan. Ahmedabad's City Development Plan, written by the Ahmedabad Municipal Corporation (AMC), along with several more specific plans, provides a snapshot of the city. The CDP is a six year plan written in 2006. While much has changed, we believe the overall goals of the city have remained the same. In this section, the current state of various planning issues in Ahmedabad is discussed.

Transportation

According to the City Development Plan, the city of Ahmedabad's transportation goals include:

1. Increasing connectivity of the city, especially to peripheral areas
2. Reducing traffic congestion, especially along east-west corridors
3. Improve pedestrian, parking, and traffic control facilities
4. Prepare for continued growth

Transportation infrastructure in Ahmedabad is dominated by roadways with nearly 3,500 km of roadway infrastructure in greater Ahmedabad. These roadways carry a variety of vehicles including automobiles, auto rickshaws, commercial vehicles and buses (see Figure 5). However, the roads are dominated by 2-wheel motorbikes. It is estimated that 25% of the mode share is 2-wheelers while the majority of travel is done by pedestrian modes (i.e. walking and bicycling). There are a small percentage of households that own personal vehicles (7%), however, personal vehicle ownership of all vehicles is increasing rapidly. In 2001 there were about 1.2 million vehicles registered in Ahmedabad. In 2011, ten years later, that number more than doubled with 2.7 million vehicles registered.

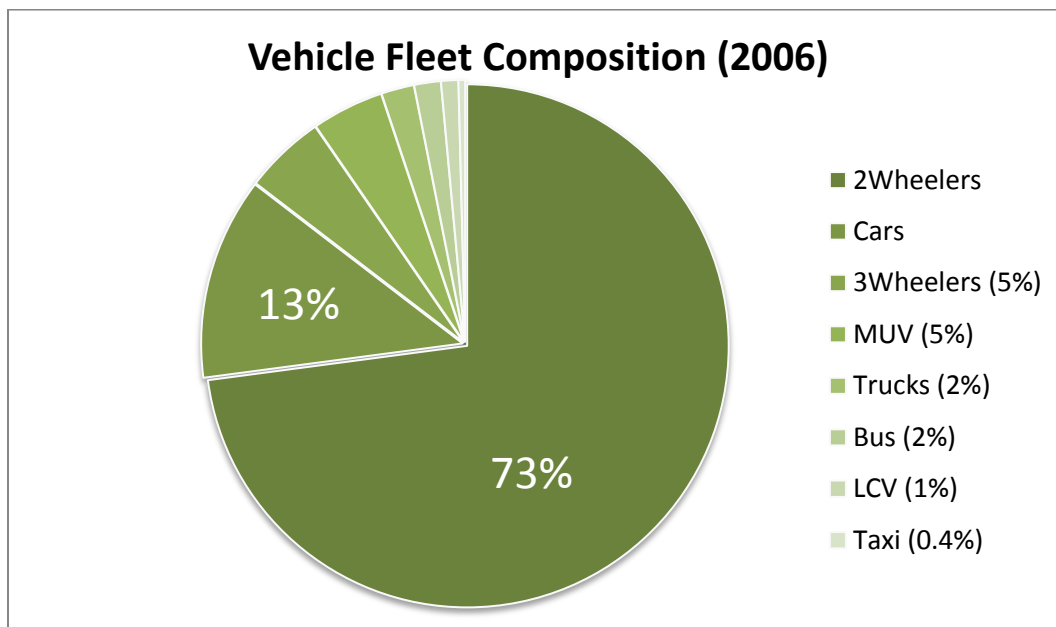


Figure 5 Vehicle Fleet Composition in Ahmedabad

While the general commute in the city is 5 to 7 minutes, there is traffic congestion during peak hours of the day. Road widening is suggested as solution in the CDP. A large percentage (88%) of roads are two lanes or less. The overwhelming majority (61%) are only one lane. Flyovers, underpasses and roundabouts are also used frequently as a means to reduce conflict points between traffic streams and, as a result, reduce congestion on major roads.

Western Ahmedabad is mainly residential and eastern Ahmedabad is mainly industrial or commercial. Consequently, there is a great deal of East-West traffic. There is especially high traffic on Subhash and Gandhi Bridges. In an effort to alleviate some of this congestion, three additional bridges are proposed to cross the Sabarmati River in the CDP. The first of which, Rishi Dadhichi Bridge, opened April 2011.

Ahmedabad currently offers two types of local transit, local buses and bus rapid transit. The local buses are run by Ahmedabad Municipal Transport Services (AMTS) and the bus rapid transit is run by Janmarg. Before the BRTS AMTS ran the only public transit system in the city. AMTS has felt a substantial annual decrease in ridership since 2000. The availability of other modes of transportation such as shared auto-rickshaws, were highly competitive with the system because it was unable to maintain a bus fleet adequate for the demand for service. The fleet size was 886 in 2001 and dropped down to 540 in 2005 due to financial reasons. ATMS serves about 650,000 passengers each day based on 2006 estimates. AMTS provides service to periphery also and not just within city limits. However, the periphery is not well connected and the road network is not fully developed.

Ahmedabad has recently constructed a Bus Rapid Transit System (BRTS), which became operational in 2009. The major objectives of building this system were to rehabilitate public transportation ridership and reduce the rate of growth for number of automobiles in the city. The motivation behind these objectives is an appreciable decrease in air quality due to higher congestion levels. The overarching goal of the BRTS is to enable public transit to remain a viable transportation option for people ever changing mobility needs in the city of Ahmedabad.

Most third world countries are seeing an increase in car ownership and automobile infrastructure demand. In Ahmedabad the rate of growth of vehicles has been about 12% per year. Several plans have been developed in response to this rising automobile demand.

1. Integrated Public Transit System project by GIDB (1998-2002)
2. Suburban Rail System by AUDA and GIDB (2004)
3. Metro Rail Transit System by GIDB (2004)
4. Introduction of CNG buses by AMC (2005)
5. Comprehensive Road Improvement Plans by AMC and AUDA (2004-5)
6. Bus Rapid Transit System (BRTS) initiated by GIDB with AMC and AUDA (2005)

Land use

The Ahmedabad Urban Development Authority (AUDA) is responsible for land use planning within its jurisdictional limits. In the Ahmedabad City Development Plan, AUDA integrates land use planning and building regulations of building activities to promote functional efficiency and orderly growth of urban areas. AUDA's development and growth goals are compact and coherent urban form, well-designed public and green open space, conservation of nature and heritage areas, integrated development, natural resources conservation, and disaster mitigation. The plan proposes that strategies be implemented to address economic development, infrastructure planning, transportation, and the urban poor and informal sector (Ahmedabad City Development Plan, 2006).

The most current land use data for Ahmedabad, which dates back to 1997, shows that more than one third (36 percent) of the total area in the AMC is under residential use, 15 percent is industrial, and 2 percent is commercial. 23.44 percent of land is open or vacant. Roads and railways make up 9.5

percent of the total area. There is no land use category for slums or informal settlements and it is unclear if they are included in the numbers for residential or vacant land, or if they are omitted from the data altogether (Ahmedabad City Development Plan, 2006).

Environment

Though Ahmedabad was voted one of the cleanest cities in India, it still suffers from many of the same issues as the rest of the country. The environmental goals outlined in the CDP are broken up into four major sections; water supply, sanitation and solid waste, sewage, and stormwater drainage and urban watershed management.

The major goals for improving water supply involved better distribution and management. It is specifically aiming for an individual tap for every household and 24x7 water supply. Also, the city would like to move toward implementing metered water and direct user charges to improve cost recovery. For sanitation and sewage, the major goals are to successfully stop all open defecation and to implement more environmentally sustainable waste management practices. Finally, stormwater and urban watershed management is focused on effective management of water systems to prevent flooding and promote the conservation and preservation of water resources.

There are many obstacles to achieving the goals set by the CDP. For example, the city currently lacks a comprehensive sewerage system, which has led to the discharge of untreated industrial effluents and sewerage into River Sabarmati leading to contamination of groundwater through seepage. Also, many of the canals and tanks in the city are encroached upon, obstructing the natural flow of water. This results in flooding and stagnation of water, thereby, rendering the surrounding areas susceptible to infectious and communicable diseases. Monitoring is also a problem because there are no monitoring stations to estimate and assess the quantity and quality of wastewaters being generated in the city. Many issues add to the problem the city is having in reducing their air pollution. There is a high volume of dust suspension due to the unsurfaced margins on majority of the roads in the city and the voluminous increase of the vehicular traffic over the years. Also, most of the vehicles are not compliant with the norms and release dangerous exhausts.

Social

Like all developing countries, economic and social concerns are a major priority in India. Gujarat ranks fifth highest among Indian states in terms of number of slums. Gujarat's slum problem is particularly acute in Ahmedabad, where approximately 41% of the city's population resides in informal settlements that are characterized by overcrowding, unsanitary conditions, insecure tenure, and high risk to public health.

There are two dominant types of informal settlements in Ahmedabad:

1. Illegal occupation of the city's margins by migrants and squatters. These slum dwellers tend to situate themselves along waterways, such as the riverfront and other low-lying areas of the city, or on vacant land
2. Chawls, originally residential units built for workers in mill premises

Though Ahmedabad had a high number of slum dwellers, the city is more fortunate than other areas of the country as it is situated in Gujarat, the wealthiest state of India. However, there are still many issues facing the city. The goals of the city as stated in the City Development Plan are to provide access to housing at acceptable standards, whether owned or rented. The main objective is to move towards a city without slums. The other goal of the city is to provide the opportunity to learn, earn and live respectably to all residents.

In Ahmedabad, urban and rural poverty has decreased in Gujarat from 29% and 20% (respectively) in 1994 to 16% and 13% in 2000. The city plans to continue this decrease through economic development and poverty reduction programs. Also, trends show that growth has been faster in the informal sector of the economy than in the formal sector. The informal sector, street vendors, etc. accounted for 77% of employment and generated 42% of city income in 2006. During 1991-2001, Ahmedabad saw an increase in the number of slum dwellers. However, there were no increases in the number of slums. This suggests a densifying of existing slums.

Table 3 provides information on the slum population in West Ahmedabad. It should be noted that these numbers only include slums and not chawls.

Table 3 Slum Population: West Ahmedabad

Population	# of slums	# of Slum HH	Slum pop	% of slums to ward pop	% of slums to total pop
673,420	156	43,142	215,710	32.03	6.13

In the 1970s, Gujarat implemented the Urban Community Development Program (UCD), which provided for a separate UCD cell in the AMC responsible for health, education and other community development initiatives for the urban poor. In addition, the state government amended the Bombay Municipal Corporation Act 1949 (under which AMC is constituted) to make it mandatory for the AMC to spend at least ten percent of its own revenue for improving basic services in slums and chawls¹⁵. The approach of the AMC until the 1990s was one of tolerance towards informal settlements on public and private lands. It allowed activities such as hawking on public lands and did not enforce anti-poor legislations. During the mid-1990s, the AMC spent nearly one-third of its capital budget in improving the basic services and infrastructure in the slums of East Ahmedabad.

The city is facing many issues regarding the slums. The first issue is the slums expansion and densification. It is happening at a pace much more rapid than the up-gradation of slums can occur. It is also causing further stress on already inadequate infrastructures. The second major issue is the lack of strong policies that could help create an affordable housing stock for the poor or help to arrest the proliferation of the slums. As Ahmedabad increasingly aims to attract transnational capital and gain international recognition for its progressive policies, the city's stance towards slum settlements is once again shifting away from one of tolerance. New urban development proposals, such as the Sabarmati Riverfront Development Project, affect a large section of slum dwellers who are living on the riverbank (an estimated 8,000 – 10,000 households), as evictions in the riverfront area are likely to increase.

The Slum Networking Program (SNP) was initiated by the Ahmedabad Municipal Corporation in 1995 to provide a package of physical improvements and community development initiatives to slums in the city. Physical improvements include individual toilets and sewerage connections, storm water disposal, paved roads, street lighting and solid waste management. Community development initiatives include the formation of community based organizations, increasing access to primary health care and education, and support for income-generating activities. The program is based on the premise that services should only be provided where there is an expressed demand for them. Beneficiary slums are thus required to demonstrate their willingness to participate in the program by contributing a proportion of the costs.

The SNP was implemented as a partnership between the city government, the beneficiaries, NGOs and SEWA Bank, a community-based financial institution. SEWA Bank provided slum dwellers with a savings bank that, in contrast to most micro-financial institutions in India, was geared towards lending.

The program has achieved some success in improving the living conditions of the city's slum dwellers. The SNP has helped secure slum residents' tenure by ensuring that they are not evicted for ten years after completion of the program. The program could help the city successfully mitigate some of the housing issues it is currently facing. However, it is financially unstable for AMC and there has been low participation from the NGOs, slowing the process of the program.

At the state level too, the government has taken steps towards improving the lives of slum dwellers. The Gujarat Slum Areas (Improvement, Clearance and Redevelopment) Act of 1973, which was amended in 1988, allows the government to improve the physical infrastructure in slums and to recover costs from slum dwellers. For implementation purposes, the Gujarat Slum Clearance Board (GSCB) was set up to take up housing projects for low-income groups. The GSCB was not able to successfully carry out in site upgrading, and, according to official numbers, was able to construct 16,700 new units, of which about ten percent are vacant. Following the recommendations of a committee under the Private Sector Restructuring Program, which was carried out with the purpose of reducing the state government's participation in the commercial sector and increasing private sector participation, the GSCB was shut down and all its assets and liabilities were transferred to the Gujarat Housing Board (Anand, n.d.)

Cultural

In addressing cultural heritage, the Ahmedabad City Development Plan (CDP) implies the goals of preserving heritage in whatever form, notional and physical, allocating resources to commemorate/honor not just the city's own history, but also its place in the country's history and making these precincts accessible and coherent to visitors. The CDP identifies issues relating to traffic congestion. Increases in vehicle traffic has caused irreparable damage to heritage resources because of vehicle exhaust, reduced visibility and accessibility of heritage buildings through parking problems, and disrupted the total fabric as a result of road widening to accommodate increased traffic. Building controls, planning and policy that is insensitive to heritage resources is also an issue. There is a lack of policy for conserving heritage resources at state and city levels. The previous Development Control Regulations of 1983 are inadequate and high FARs within the old walled city encourages the demolition of historic structures in favor of amalgamated plots with large buildings. Also, the definition of heritage as interpreted by ASI excludes medieval pols and some colonial properties. Deteriorating building stock, inadequate municipal services and a lack of new investments in the heritage areas were also identified as issues. Additionally, Ahmedabad is currently applying to be a World Heritage Center, which would further establish its Indian, as well as its global influence (Ahmedabad City Development Plan, 2006).

Planning Issues in an American Context

Coming from a country that has already experienced its economic and population boom, American planners have some insights into the challenges to which certain types of development may lead. This section will explore planning issues facing American planners in hopes that some lessons can be applied to the Indian context.

Planning Theories

Traditionally, the planning profession was equated with state-centered planning managed by professional planners and other technical experts. The Rational Comprehensive Model was the first recognized theatrical model for modern planning. Based on positivist, objective planning, the model focuses on rationality in decision making and policy. Planners are expected to educate the general population and guide them to make the best planning decisions possible. This model was seen by many, and often still continues to be seen as the basis of traditional planning practice. Although the rational comprehensive model had many proponents, it garnered increased criticism as the planning practice

grew. Its focus on the technical aspects of land use and development, while avoiding discussions concerning values and social justice, were viewed as a means to legitimize the status quo and institutionalize unequal conditions. This model is often criticized for its top-down planning approaches built on political elitism.

Since the 1960's, the planning profession has broadened beyond this traditional practice to include new theories of planning, such as the advocacy, communicative, radical, and social-learning models. These models move away from the rational-comprehensive model of planning to incorporate different theoretical models based on decentralized planning. The process of decentralization disperses the decision-making process among the people and relies on lateral relationships, rather than a hierarchy of authority. In decentralized planning, the planner's role is broadened beyond technical expert to activist, facilitator, and manager. Decentralized planning can positively affect a community or region in ways not possible through traditional rational planning. Some examples of the potential beneficial outcomes of decentralization are more democratic participation, government transparency and accountability, leading to more responsive governance, increased efficiency delivering public goods and services, and increased ability to identify and satisfy the needs of marginalized populations. Decentralization can encourage a more inclusive decision-making process among disenfranchised populations, such as ethnic minorities who are far-removed from the decision-making power of the state (Beard et al., 3). However, local leadership needs to demonstrate its capacity to meet the population's needs (Beard et al, 2008)

In the 1960s, advocacy planning emerged as an alternative to rational planning, where the role of planners was to provide professional services for disadvantaged populations. The planners' technical skills and experiences were to be used to foster community organization and togetherness (Sandercock, 1998). Although this was a step up from the rational-comprehensive model, planning models still relied heavily on the expertise of planners. Advocacy planning was soon criticized for assuming that planners, who were mainly white, middle class males, could serve as the voice of the poor and do so without bias. The equity planning model sought to alleviate this issue by redistributing power and resources from the elite class to the working poor. Local meetings encouraged dialogue among the people, but the model retained the previously held belief that planners should remain the key decision makers in the planning process.

Social learning and communicative action models promoted the use of local knowledge acquired through "learning by doing," which intended to address the needs of multiple parties with competing values and interests (Thomas, 2008). The planning process was no longer viewed as a one-way street, but a continuous transitive relationship between the planner and community where ideas were continuously reflected upon and reassessed. The decision-making process came to be seen as more important than the decision itself, but despite the inclusivity of the theory, the role of the planner as central decision maker remained an integral part of the process (Sandercock, 1998). Additionally, social equity was viewed as philanthropic act, rather than a collaborative effort between planners and citizens, and the disadvantages were still provided minimal influence in any dialogue or collaboration that might occur (Thomas, 2008).

Radical planning practices attempted to correct systematic inequalities in the distribution of power, opportunity, and resources. From the 1960s to 1980s, class analysis of urban inequalities was the dominant radical critique, though it shortsightedly classified underrepresented populations as one unit. The model failed to grasp that the oppressed were not only the poor, but also women, people of color, homosexuals, and immigrants. Radical planners attempted to work out inequalities and social justice issues through urban social movements and community-based organizations. Bottom-up programs engaged the communities and helped gain their trust, something that was lacking in previous

approaches. A far cry from rational planning, planners utilized contextual knowledge and interpersonal relationships when advising and managing group processes (Sandercock, 1998).

All of these theories are useful within certain contexts and purposes, and most planners agree that there can never be one, all-inclusive theory that works for all instances. Even planners who aspire to plan for a specific purpose, social justice, do not agree on one correct theory to use to attain that goal. While advocacy and equity planning intends to plan for the underprivileged, some find that it does not give enough consideration to the social structures that underlie uneven distribution (Thomas, 2008). Others uphold the merit of a radical model that focuses on theories of power, social transformation, interpersonal relations, and group dynamics, in order to understand how to identify and fight for the “public interest” amid social polarization and diverse cultures (Sandercock, 1998). Still others look towards methods for planning policy based models that support social mobilization and empowerment, such as social learning and the advocacy model (Bollens, 2000). Despite the use of various methods, the rational-comprehensive model continues to be popular among many planners despite critiques that it is overly presumptive of the planner’s authority and can even seem anti-democratic. Despite the emergence of other models that have attempted to eradicate the issues prevalent in rationalism, the rational-comprehensive model continues to remain largely popular among planning theorists (Sandercock, 1998).

Transportation

There is almost an inevitable increase in automobile ownership paired with significant increases in economic development in all countries and India seems to be no exception. Ahmedabad, specifically, has seen a growth in auto ownership of about 12% per year. While the actual rate of ownership is still well below the levels of the United States and Europe, the level of densities and population growth combined with substantial increases in automobile ownership can create serious urban planning problems.

Currently the U.S. is in the midst of conflict and transition with regards to transportation. Historically, the United States has supported an automobile environment above all else. Initially, the motivation was pedestrian safety. The rate of interaction between pedestrians and cars at four-way intersections led to concern over pedestrian safety. Expressways with limited access were created to reduce these interactions and were successful. However, the eventual higher speeds of these roads and the lower driver expectancy for pedestrians have increased the severity of the crashes, leading to more overall pedestrian fatalities (Huang et al, 2008). It also became common to attempt to separate people and cars through design with culs de sac and zoning with separation of land uses, creating the typical American suburb (Dumbaugh, 2009). Another motivation was to keep up with appearances and to prove our technology and engineering abilities. The German autobahn influenced Dwight Eisenhower when he was in Germany during World War II to the extent that, after he became president in the 1950s, he championed the largest public works project in history, the Interstate Highway System.

The effect of this design has led to a national congestion issue. The costs of congestion lie in the hours spent in delay, extra fuel burned, and economic costs to the nation. A common method Americans use to ease our congestion problem, is to build more capacity into our roadway systems through building or widening roads. One of the biggest challenges brought about by increasing capacity in this way is the effect of induced demand. Generally, roads are built to provide enough capacity for the current traffic demand with some extra room for future demand. However, it has been proven that simply building or expanding a road causes so much additional demand, that it reaches capacity after its first year. This is due to the renewed desire for people to use the new, uncongested road and also for businesses to locate on large roads with greater mobility. Commonly in the U.S., the problem has been solved by continuing roadway expansion. The widest interstate cross-section is found in San Diego’s on

I-5 at 21 lanes. The eternal road expansion has only led to a greater congestion problem and a reliance on the automobile has also made America's air quality substantially worse.

There are, however, many other methods that can be used to ease congestion on roads. Establishing tolls or user fees for roadway users to reduce the subsidies that commonly support automobile use and implementing policies supporting alternative forms of transportation can be implemented on national, state, and local scales. Also, reducing or eliminating the supply of free parking can have a substantial impact in reducing congestion. As private automobile ownership and automobile travel increase, the need for parking also increases. Providing parking, however, is not a simple issue to address. The American experience with parking can provide insight into the complications surrounding parking.

In the automobile-centric environment of the United States, parking is often an assumed amenity for residents, commuters and visitors. Parking may be found along the traffic thoroughfare or on privately owned property and parking may be available for no charge or it may have a fee associated. Depending on the type and price of parking, it can have various effects on transportation and land use in the surrounding area, across a city or even throughout a region.

Street parking has various advantages and disadvantages. It can provide access to street level retail and support economic development but it can also increase congestion. Street parking can also provide a buffer between pedestrians on sidewalks and vehicles driving on the road and is one of the indices used to identify walkable corridors. At the same time, street parking requires the reduction of roadway width to accommodate parked vehicles, which may have negative effects on congestion. One way to allow this access and provide this buffer, while curtailing congestion, is to price street parking at a market value. Pricing parking disincentivizes driving when there are other transportation options available. Also, strategically implementing time limits and price structures increases parking turn-over and limits long-term parking. This produces more opportunities for new cars to park, reducing traffic congestion that may result from cars that are searching for a spot. Another option for reducing congestion due to drivers in search of street parking is to price off-street parking at a lower cost. Still one must keep in mind that off-street parking has its own set of issues.

Off-street parking has a suite of issues. In the American context, the cost of parking is highly undervalued. This is compounded by the fact that the price to park is often free. Zoning ordinances and other regulations impose parking minimums on businesses in an effort to provide automobile access and stimulate economic development. A vocal critic of the American parking structure, Donald Shoup, illuminates the actual cost of free parking and the impacts that it has had on American urban development in his book, "The High Cost of Free Parking." He has determined that the actual cost of an average parking space is more expensive than the cost of an average car. Drivers are not made aware of the land value, construction costs of facilities, maintenance costs, and other indirect costs, as well as lost tax revenue resulting from parking as they pull into an empty spot.

In addition to the actual monetary costs of parking, the social costs of parking facilities are not captured in the price one pays to park. The social effects of parking are seen in the impact parking lots and garages have on urban land patterns and the environmental results of parking, such as increased impervious surface and disincentive for transit. Again, a way to better control how parking affects the urban landscape is to price parking to market value. Pricing parking creates an environment that adequately charges for the benefit of auto-accessibility and reduces excessive parking. Reduction in excessive parking also allows land to be used more effectively than as surface parking. Charging users for parking can have many other benefits also. Pricing parking provides an "innovative" revenue source for cities and other municipalities. Charging for parking, especially using variable pricing for peak and off-peak periods encourage high turnover rates and ensure that there will be sufficient parking supply to

meet the demand. It can also have benefits for air quality, especially if it is coupled with technology that alerts drivers of available spots or with transit supportive policy.

Urban parking, on-street and off-street, are invariably connected when speaking of pricing. Excessive off-street parking will lower on-street parking prices below market-value. Lack of off-street parking will increase the demand for on-street parking. Off-street parking facilities generally cost more and have a greater effect on the land use patterns of a city. However, these can be privately owned and operated. On-street parking is generally within the public right-of-way and is maintained by the municipality. In this way, the local government has greater control over the pricing of this facility.

Despite a perceived need among many transportation professionals to price and/or limit parking, it is unfeasible to do so without alternative methods to reach these destinations. These alternative methods may include transit, biking or walking. Biking and walking are currently options in the dense development of Ahmedabad, however, precautions to improve pedestrian safety may need to be taken. The proposed heavy rail system is a positive move towards increasing transit access in this area of the city also.

Today, there is a strong movement to reconcile what was lost in the history of building auto-centric environments. Most American urban planners lament the decisions of the past and view it as the death of the pedestrian environment in the U.S. "New Urbanism" is an urban design movement which promotes walkability, placemaking, and sustainability through pedestrian and bicycle improvements, pedestrian scale urban design elements, and mixed-use development (businesses, employment centers, and residences all in one building/development). This movement has gained substantial momentum since it began in the 1980s, and while there are critics, several of its design philosophies are now considered nonnegotiable. While the use of many of these philosophies may be inappropriate in an Indian context, it is important for a country in which development is happening at an extremely rapid pace, to consider the negative effects of the way it is developing. It is not likely that new urbanism holds the key to utopian urban environments; however, India can use America's history and problems as a case study to inform their planning and policy decisions.

Zoning

In the United States, zoning ordinances and regulations regularly define how property can be used. Cities, counties, townships, and other local governments adopt zoning plans in order to set development standards to assure that land is used for the common good. Enacting zoning changes on property can be a very difficult course of action. It requires a process of giving public notice and then having a variance approved by government agencies that oversee enforcement of the zoning plan. Most zoning ordinances place limitations on a property owner's ability to subdivide land. There are rigorous procedural requirements for notices, hearings and consideration by zoning authorities before permission can be given to subdivide property.

Zoning laws in America seem to be similar to the laws in India. They are used to establish restrictions such as building height and size, proximity between structures, minimum lot requirements, and types of facilities that must be included with certain kinds of uses. Zoning ordinances that limit the number of stories and total height of a building or have setback and side-yard requirements can deter dense development. A conditional use is a use that is permitted under a zoning ordinance, but that must meet certain conditions. For example, a zoning ordinance may permit professional offices in a residential zone if at least four off-street parking places are provided. When a use is conditional, the zoning ordinance often will require the property owner to file an application with local officials so that they may determine whether the conditions have been met.

Local land use plans and zoning ordinances usually contain restrictions on land uses in specific areas (or zones) outlined in the plan or ordinance. Once local officials have adopted a plan and

ordinance, property owners may seek exceptions to the requirements and limitations through either an amendment to the plan or ordinance or application for a variance or special use permit. In both cases, the amendment or application may be opposed on the grounds that permitting special exceptions for specific properties is inconsistent with the overall land use plan or ordinance, and constitutes illegal spot zoning. Existing properties are often used in a manner that's inconsistent with a new zoning ordinance. Such uses are referred to as non-conforming uses because they do not conform to the requirements of the zoning ordinance. Amortization is a way to control non-conforming uses. Under this approach, a non-conforming use is permitted to continue for a specific period of time, after which it must be converted to a conforming use. A variance or special use permit can also provide an exception to the requirements of a zoning ordinance. Most statutes permitting the adoption of zoning ordinances also detail the circumstances under which variances may be granted.

Intermediate Brush | Corridor

Project Area

While the CDP provides an overview of transportation in the city, some specific information about Ashram Road can be obtained because of its relevance as a major regional thoroughfare. Ashram Road is about the 5th widest road in the city at approximately 30.5 km in width and carries 12,000 to 15,000 passenger car units during peak hours. Peak speed on Ashram Rd is 12.5 km/hr, which is lower than the speed on other major roads. While accidents along Ashram Road are relatively low, the segment of CG Road just west of the intersection with Ashram Road has a critically high accident rate.

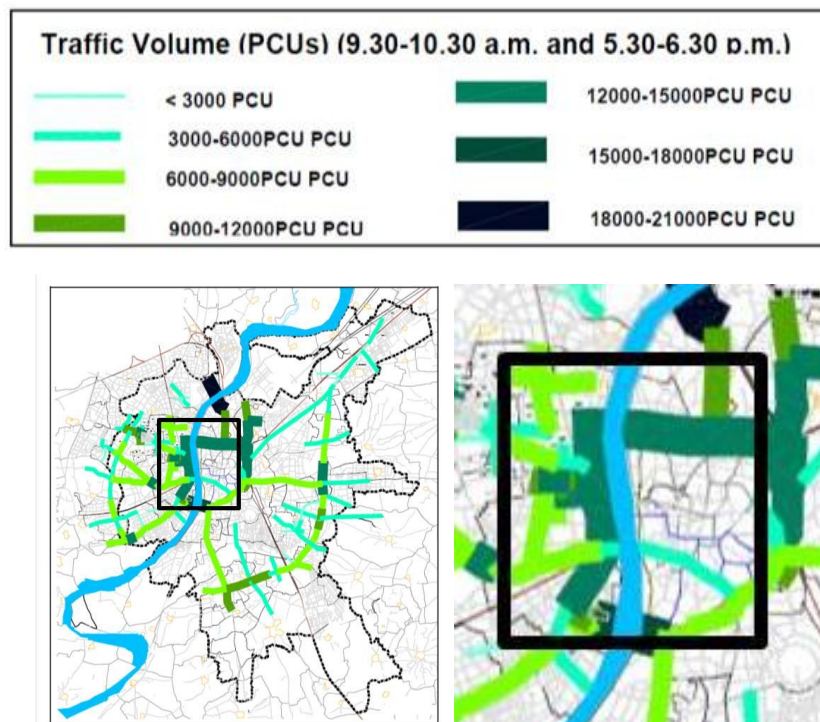


Figure 6 Link-wise Peak Hour Passenger Trips

Table 4 summarizes issues identified by the CDP for transportation in Ahmedabad.

Table 4 Transportation Issues Identified in CDP

Poor junction design	Rotary capacities are finite
	There are many five and six arm junctions
Inadequate parking facilities	Commercial development is along major roads
	Many establishments do not account for parking
	On-street parking inhibits roadway
	Paid parking (not identified in CDP, however, there is little to no paid parking in the city)
Lack of pedestrian facilities	Pedestrian facilities (footpaths, crosswalks, grade separated crossings) are lacking
	Major commercial roads do not have adequate pedestrian access
Delays and low travel speed	Congestion delays reduce speeds to less than 10 km/hr on major roads
Manifold increase in the private vehicles	Large increase in two wheeler ownership over last decades
	80 percent of total vehicles are two wheelers
	High growth results in air pollution and congestion
Inefficient public transport system	Increasing costs and decreasing occupancy rates for AMTS
	Poor service quality and quantity has resulted in reduction of ridership

Riverfront Development

The Sabarmati Riverfront Development Plan was initiated in May 1997 by the Ahmedabad Municipal Corporation and prepared by the Environmental Planning Collaborative (EPC). The proposal was to reclaim 162.8 (185) hectares of land along 10.5km on both sides of the river in order to “revivify the city center by reconnecting it to the river.” The project aims to create a thriving and active center for Ahmedabad to improve the quality of life for residents and enhance Ahmedabad’s value as a destination for new employers, institutions, investment, education opportunities, and tourism.

The concept for the project springs from the idea that accessible rivers, such as those found in such global cities as Paris and Melbourne, have significant public value and define local culture. Waterfronts that have been developed for leisure, recreation, and as gathering spaces can drastically improve the quality of life for citizens. The Sabarmati Riverfront Development project aims to bring together global wisdom and best practices to revive the river as a public sanctuary for the people of Ahmedabad.

The Sabarmati River, which runs through the center of Ahmedabad, creates physical division between the eastern and western sides of the city. The Riverfront Development Project helps transform the river from a geographical divider into a binding presence in the city. The public spaces developed by the project enable both the eastern and western sides of Ahmedabad to come together and establish a distinctive central landscape along the river. The riverfront project creates intrinsic value for all residents of Ahmedabad by making the banks of the Sabarmati free and accessible to the public.

The key element of the project is a new linear two-level promenade. The lower promenade with a minimum width of 10 meters will be just above water level, providing uninterrupted pedestrian access to the water. The upper promenade will host a variety of public buildings, cultural and educational institutions, public parks and plazas and a few areas for commercial development, while new traffic infrastructure will connect the riverfront to the city.

The riverfront is intended to be self-funding and pays for itself through the sale of a small amount of project land. Approximately 21% of the reclaimed land will be sold for residential and commercial use and the remaining land to be used for roads, gardens, promenades, informal markets. 10% is reserved for relocation sites for approximately 4400 households displaced from slum clearance (Sabarmati Riverfront, 2012).

Transportation

Metro Plan

AUDA, AMC, the Tourism Corporation of Gujarat, and the Gujarat Infrastructure Development Board have made substantial efforts to plan for the building of a metro rail line in Ahmedabad. Part of the reasoning behind this decision is the congestion problems face the city, but it is also likely to have some basis in the desire each of these stake holders have in turning Ahmedabad into a world class, internationally-renowned city. Delhi has an elevated rail project, and they consulted with Ahmedabad in 2005 and 2006 in developing their plan. Also, Chennai, to the south, currently has its own elevated rail system under construction.

The MEGA Corporation was founded in 2010 in order to implement a metro rail project connecting Ahmedabad, the Ahmedabad Airport, and Ghandinagar. The current proposal consists of an elevated heavy rail system within the Ashram Road right-of-way and an estimated 13 stations along the route. The goal is to have the entire project completed by 2015. Stated motivations of MEGA include limited land acquisitions and increased densities along the route. Ultimately the MEGA Corporation envisions the west bank of Ahmedabad to become a linear Central Business district along Ashram Rd. The MEGA website compares Ahmedabad to other global cities, describing it as a “globally preferred place to do business”.

The MEGA plan is loosely coordinated with Ahmedabad’s existing BRTS system, but lacks coordination with other major development plans; most notably, the Riverfront Redevelopment Plan and the Ashram District Redevelopment Plan. The major focus so far has been on connectivity while the more complex issues of land use and physical impacts have been neglected. Important factors such as the impact upon current residents and pedestrian access still need to be addressed. 60% of the funding for the rail project is expected to come from real estate development. This financial model was taken from the big cities in China, such as Shanghai and Beijing, who have funded large infrastructure investment through selling FSI increases to developers.

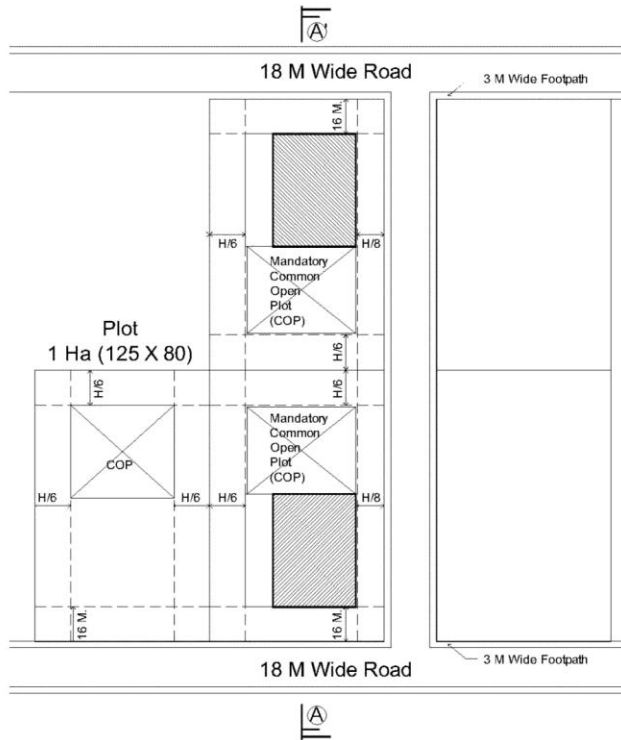


Figure 7 MEGA Floor Area Ratio Proposed for CBD

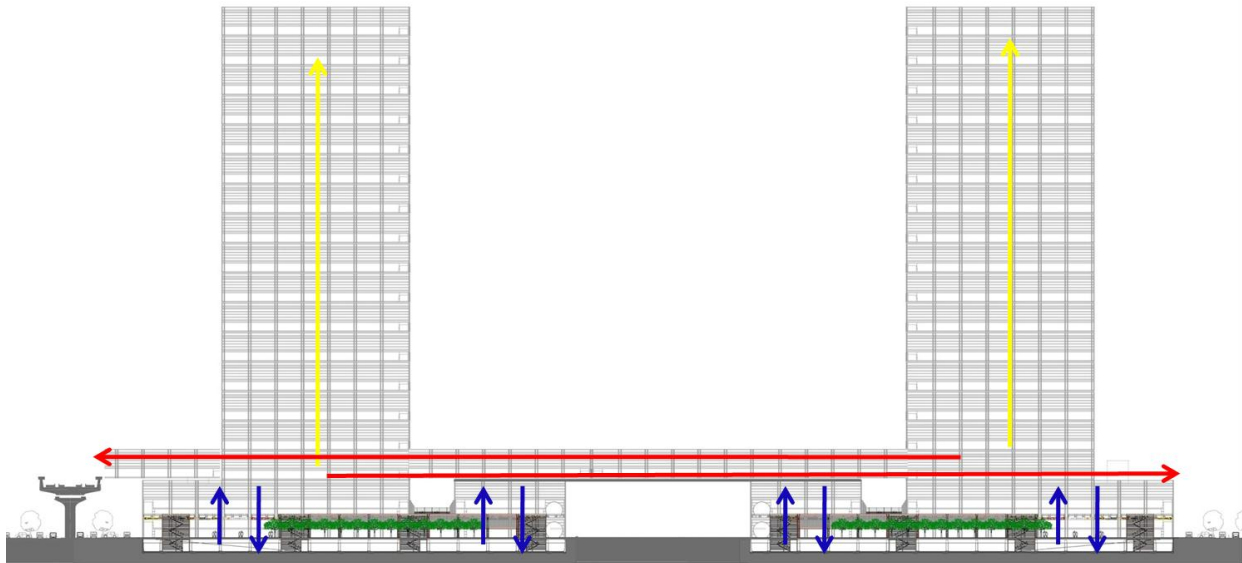


Figure 8 MEGA Building Proposal for CBD

Major conflicts exist between the Ashram District Plan and the MEGA plan. One is the portion of Ashram Rd directly in front of the Ashram. In the MEGA plan, Ashram Rd is unchanged and an elevated rail runs down the middle. In the Ashram plan, Ashram Rd becomes a pedestrianized area, reconnecting the two sides of the historic Ashram complex. The pedestrianization of this portion of Ashram Rd would enhance the Ashram's identity as a tourist destination. There is an opportunity for the MEGA system to incorporate the Ashram as a major station, especially because it is currently not served by public transit. If the MEGA plan continues as is, the opportunity to create an Ashram District will be completely lost.

Substantial efforts have been made to create a heavy rail system in Ahmedabad to connect it to Gandhinagar. This is a project with a regional scope, which will also have a substantial influence locally. The choice to select medium capacity heavy rail transit stems from the forecast peak trips for each trip type. The MEGA report to the Gujarat Infrastructure Development Board specifies the rights-of-way on Ashram Road. Usmanpura, found in the center region of the project area, has a public right-of-way of nearly 40 meters. The right-of-way in the CBD is cited as the same width, but this may or may not include the secondary mixed use paths along the service lanes. Construction of the transit guideway's elevated superstructure would require the occupation of 10 meters along the central median, approximately 25% of the available right-of-way in the corridor. It is suggested that the road be widened in the interim to allow travel lanes to pass.

The suggestion of consuming additional pedestrian space to facilitate auto mobility will likely hamper pedestrian activity and expose many individuals, especially in the CBD to a higher risk of accident related fatalities. Additional road volume along the Sabarmati riverfront should be used initially as a diversion for the Ashram Road projects. The proposed Aayakar Bhavan station along the Ashram Road corridor will include a transfer point to the East-West rail line. The station is located closest to the Gandhi Bridge, and is likely to become a critical multimodal node. Aayakar Bhavan is one of the stations on the Metro rail corridor that will require existing land to be repurposed for use as a station concourse. This report also acknowledges a need to mitigate risks wherever possible. Identified among risks for the MEGA project are: 1) commuter volume; 2) fare increase; 3) overruns in capital cost/construction duration; 4) bankruptcy from poor financial returns; 5) poor maintenance. Fare increases are hoped to be mitigated by the inception of an independent agency to prevent bus fares from becoming too subsidized; such to the point that the rail option is not competitive. Mega also notes that rail systems are capital intensive and often generate returns on investment and external value that is not recaptured by the transit organization for cost items such as operations or maintenance. It is noted that full cost recovery is not to be expected.

Transit Alternatives

While the MEGA plan was very thorough in its studies of the alignment for the new heavy rail, some possible alternatives were discussed as the Ashram Road Corridor Study progresses. For instance, it would enhance the Riverfront Development project, increase tourism, and preserve the historic area of the northern section of the corridor, if light rail was considered along the riverfront, instead of heavy rail down the corridor. Another option which could provide the same level of service as the current plan would be to redirect the heavy rail to share the same right of way as the regional rail that lies to the west of the current corridor. This alignment would allow Ashram Road to maintain its current context, while providing a nearby transit alternative for those who use the corridor.

River-Road Connections

Part of this project's intended contribution to the development of the Ashram Road corridor, was to study the potential connections that the corridor currently has to the riverfront. These connections are greatly important, as the riverfront is meant as a destination for residents and tourists; a lot of pedestrian access is required. The map in Figure 9 is of the connections, which exist in the current plot structure of the project area, as taken from Google Maps. The connections shown in orange are the existing streets, while the potential connections are shown in red.



Figure 9 Existing and Potential River-Road Connections

Another aspect of these connections that was important to the project was that the access points have developed organically as residents have created them to gain access to the river. Due to the slightly controversial nature of the Riverfront Development project, which is criticized for destroying the historic uses of the river and the residents' attachments to that past, one of this project's goals was to maintain a sense of the historic identity through attempting to use the fabric that has grown organically. Obviously, the type of development desired for this corridor, may not allow for the preservation of all of these connections, however building around these as an initial template could help in softening the drastic changes proposed in this area.

Land-use

Current

The current land use along the corridor is extremely varied as shown in Figure 10 . The northern segment has very low development and contains Gandhi's Ashram, the Gandhi museum, and the slums that were created by Gandhi. The southern section of the corridor has a much higher level of development with more commercial businesses and larger buildings. The drastic differences between the two ends of the corridor made it impossible to make recommendation for the entire project area. Instead, districts were developed that could maintain the current use context for each area of the corridor. These districts are the Central Business District, the Transitional District, and the Historic District and they are illustrated in Figure 11.

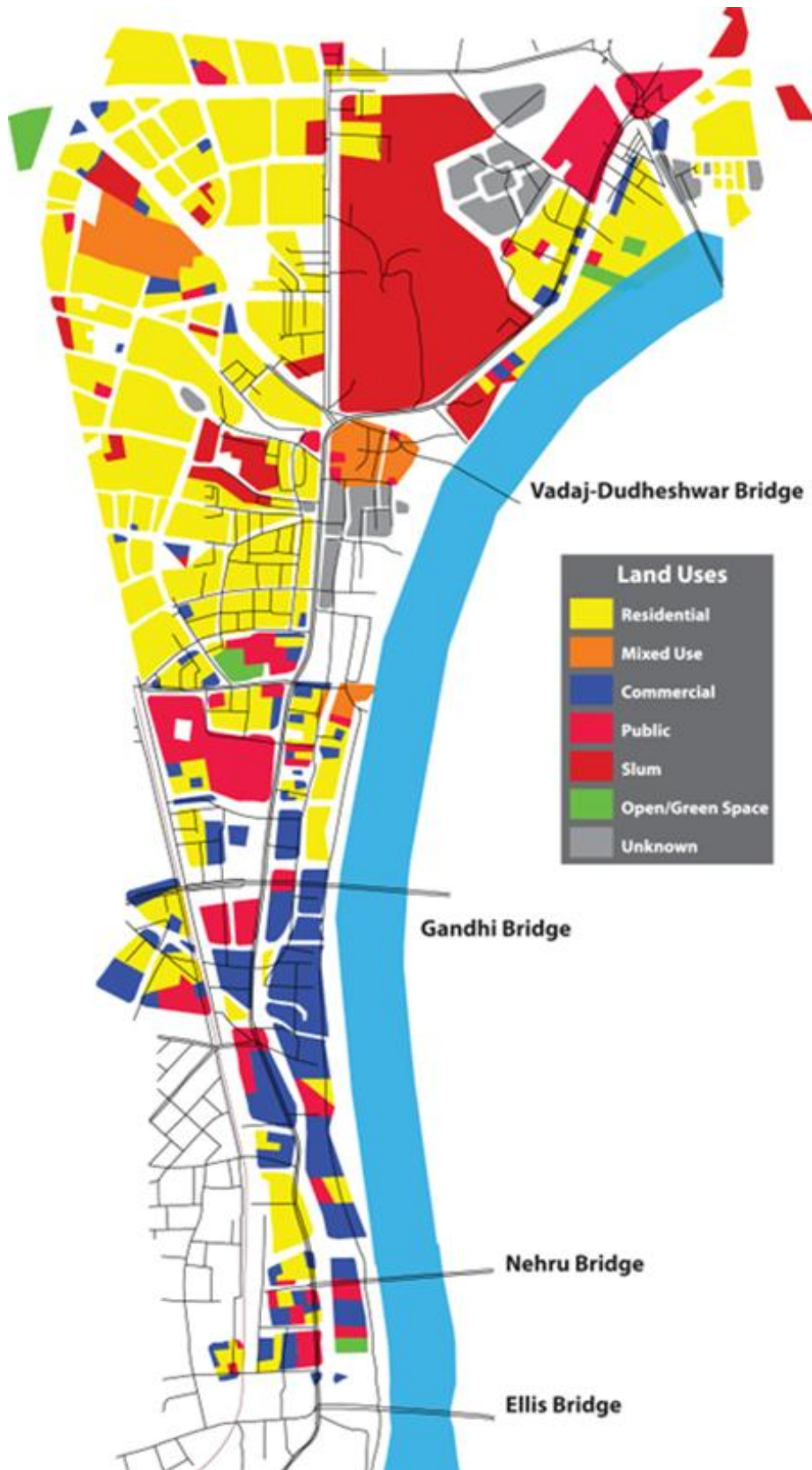


Figure 10: Current Land Use Map

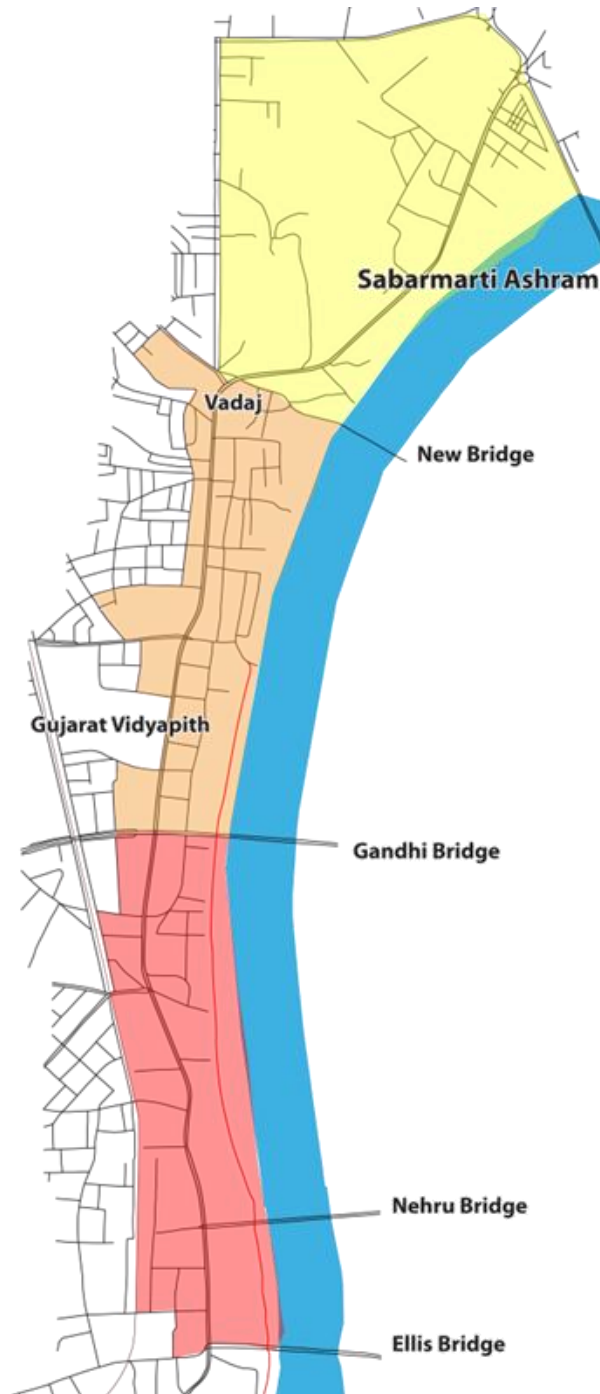


Figure 11 Zoning Districts for the Ashram Road Project Area

Central Business District

The area on Ashram Road that has been identified as the location of the Central Business District (CBD) is bounded by Ellis Bridge to the south and Gandhi Bridge to the north. It is currently characterized primarily by commercial development. There is a small percentage of residential and public land. Commercial land uses south of the Nehru Bridge encourage a high level of activity in this area. The highest densities in the corridor study area are located here, particularly between Ellis Bridge

and Gandhi Bridge. This area also has a small amount of residential development. Despite this being a dense, active commercial area, building heights are generally less than 10 stories.

Transition District

The area between Gandhi Bridge and Rishi Dadhichi Bridge has a stronger residential presence than the southernmost section of the corridor study area. It is characterized by slightly lower density land uses, but is still a busy portion of the corridor. Gujarat Vidyapith University is also located in this area. The Transition District serves as an attractive residential area because of its close proximity to both the CBD and the Historic District. Land values in the transition district are slightly less than in the CBD and they continue decrease as one continues north.

Historic District

Land uses at the northern portion of the corridor study area are influenced by Gandhi's Ashram and are more residential with some emerging commercial industries. The Gandhi Ashram represents an important element of the city's history. It also serves as important tourist destination that could be a possible stimulus for economic development, addressing both the city's goals for development and the goals of those wishing to preserve the northern area of the corridor. This area also contains a significant number of slum residences that house the lower class.

Fine Brush | Districts and Design

Through the analysis of the corridor and the delineation of the separate land use districts, several recommendations have been established for the project area. This section explores, first the strategies used to decide upon the recommendations, then the actual designs of each piece of the project: transit, Central Business District, Transitional District, and the Historic District

Strategies

Pedestrian Infrastructure

Walkability

India has more road fatalities each year than any other country in the world (Timmons 2010) and these primarily fall upon the poor and vulnerable who do not have a means of transport other than their own feet (World Bank). In 2008, 118,000 were killed in road accidents as compared to 73,500 in China, the previous leader (Timmons, 2010). Pedestrians are the most vulnerable travelers on any roadway and approximately 45% of Ahmedabad's mode share comprises pedestrians. The proposed transit line will also increase the need for pedestrian infrastructure in this area. Transit requires land haul modes such as walking and biking. As such, pedestrian safety should be of great concern in transportation planning for the city of Ahmedabad.

Pedestrian fatalities can result from a variety of reasons including inadequate pedestrian infrastructure. The lack of pedestrian infrastructure in Ahmedabad was noted in the CDP, however, strategies and plans to address this issue were not included in the future plans for the city. Not only does a lack of pedestrian facilities (i.e. sidewalks and crossing features) pose a safety issue for those walking, but pedestrians traveling in the roadways and "mid-block crossings" also add to traffic and congestion problems experienced by drivers. However, creating safe walking environments requires more than the installation of sidewalks and "zebra-crossings."

The GWI has created standards for walkability in developing countries. GWI has a nine walkability parameters derived from surveys that are applicable to Asian settings:

1. Walking path modal conflict
2. Availability of walking paths
3. Availability of crossings
4. Grade crossing safety
5. Motorist behavior
6. Amenities
7. Disability infrastructure
8. Obstructions
9. Security from Crime

These parameters correspond to some of the American walkability indices developed by Institute of Transportation Engineers and the Congress for New Urbanism as recommended practices for the design of walkable urban thoroughfares.

The ITE/CNU recommended practices were created in an effort to build transportation corridors that are walkable and pedestrian-oriented. The recommended practice is at its core context sensitive, which provides an opportunity to apply the lessons learned and expertise of planners, engineers, and design practitioners to various situations. Some of this information can be related to that of the [World bank] and translated to the Indian context to create pedestrian inviting environments to connect Ashram Road and the Sabarmati River and along the Ashram Road corridor to include the ubiquitous pedestrian into planning for transportation in the city.

The Recommended Practices were developed as a response to the need to provide safe, livable environments along transportation corridors that maintain the integrity of the neighborhood. Drawing upon the philosophies and practices of smart growth, the recommended practices focus mainly on urban collectors and arterials and the surrounding land uses, development intensity and design features. This is not only helpful in transportation planning but also to provide an idea of what features create a safe and inviting pedestrian environments.

A block by block empirical walkability index was created by HPE to quantify the pedestrian experience. The index is based on ten criteria that were observed to create walkable environments in over 40 design charrettes and workshops that were performed by HPE over the last 20 years. The walkability indices criteria include:

1. Vehicle travel speed – Free flow speed in non-peak hour; posted speed as minimum
2. Roadway width – Width at pedestrian crossings
3. Pedestrian connectivity – Network density measured by the distance between intersections and mid-block crossings
4. On-street parking – Percent of block face used for parking needs
5. Sidewalk width – Width of paved sidewalk
6. Pedestrian features – Presence and quality of features for pedestrian travelers
7. Street enclosure – Ratio of building height to street width
8. Landuse mix – Variety of pedestrian attractive land uses
9. Façade design – Façade character and number of doors per block
10. Bus stops and bike features – Presence of bus shelters, bicycle racks, etc.

Given the Indian context, some of these indices must be modified. Travel speeds must be viewed in the context of Ashram Road. Congestion along the corridor creates a state where there is rarely a free flow state and the posted speed is rarely achieved. The average speed along Ashram Road is 12 kph (CDP) which is well below the 25 to 35 mph (40 to 55 kph) suggested by the Recommended Practices. As traffic improvements are made, the speed along the corridor may increase, however, the benefits of reduced speed should be weighed against the benefits of vehicle mobility. It should be kept in mind that the majority of Ahmedabad residents use pedestrian modes of transportation and their needs must be included in transportation planning as well as those seeking increased vehicle mobility.

The land use mix in India is generally desirable for walkability given the nature of the cities throughout the country. There is typically a diverse mix of uses and this is the case along Ashram Road. To assess walkability the surrounding street network is as important as the corridor in question. As such, special attention should also be given to CG Road running perpendicular to Ashram Road. High levels of fatalities (CDP) suggest that this is an unsafe pedestrian environment. This road is part of the network and should be considered for pedestrian upgrades as well not only to increase pedestrian mobility to and from Ashram Road but for the general safety of the residents of Ahmedabad.

Pedestrians are not constrained to defined crossings in the Indian context. This negates the concept of “mid-block crossings” and may be a case for consistent street widths (and nullify certain pedestrian treatments such as bulbouts) to address road widths. It also raises a concern about the effectiveness of “zebra striping.” On-street parking will also have different implications in the Indian context, especially along Ashram Road. Parking is not priced in Ahmedabad. Adding on-street would serve the goal of providing a short term parking solution only if pricing was implemented to induce turnover. In addition, the current mode share suggests there may not be the demand for short term parking. Parking can also be used to reduce speeds along the roadway and given the current state, this is not necessary.

In comparing these indices, some overlap exists between GWI (e.g. *availability* of crossings as opposed to width of crossing). All of these criteria, ITE/CNU or GWI, will not be applicable to the smaller street connections between Ashram Road and the Sabarmati Riverfront, however, pedestrian features and amenities, street enclosure, security from crime, façade design, bus stops and bike features, obstructions, and availability of walking paths can be incorporated into these areas to provide more inviting pedestrian areas.

Placemaking

Making these smaller street connections more pedestrian friendly can also benefit from the principle of Placemaking. Placemaking will also have an application in the arcade spaces under the elevated metro. Placemaking is also a very community involved process. The needs and aspirations of the community inform the future character of the areas in question. It is also an incremental process that starts with small feasible improvements that can be beneficial immediately. Eleven principles for placemaking have been developed by Project for Public Spaces (PPS) through their experience in 26 countries and throughout the United States and Canada. The following list is adapted from PPS.

1. The community is the expert
2. Create a place, not a design
3. Establish relationships with partners
4. Observation provides insight
5. Create a vision
6. Start lighter, quicker, cheaper
7. Triangulate
8. There are always obstacles

- 9. Form supports function
- 10. Money is not the issue
- 11. You are never finished

Clearly the first principle underlines the context sensitive approach that is necessary for place making. Through the first principle, historic perspective, critical issues and valuable insights into the functions of the area can be obtained from the community. When this is understood at the onset of a project, the community has buy-in and the end result will benefit the community as well as the project sponsor. This community input is also essential in developing a vision (principle 5). Additionally, principle four also encourages a context sensitive approach by observing how the space is currently used (or not used).

Several of principles support an incremental approach. Principle 6 suggests beginning small. Simple, small, short term improvements (such as seating, public art, pedestrian striping) can serve as a test ground and can then be refined over time. Principle 8 addresses coordination and suggests starting with small-scale improvements as demonstrations for future improvements. Principle 10 again suggests incremental improvements to cope with financial constraints. Principle 11 reminds that placemaking is an ongoing process and inevitable change requires flexibility. The ongoing process also supports the possibility of incremental improvements over time.

The last few principles address the need to focus on function and not design. Principle 9 underlines this point. The function of the area can be understood by the context related principles discussed previously and the vision for the area. Principles 2 highlights the importance of making both physical improvements but also management improvements by addressing pedestrian circulation and relationships with surrounding retail and activities. Principle 7 builds on this by suggesting that there must be multiple activities available that interact with each other and naturally bring people together. A bench, wastebasket, and chai cart alone may have limited use but together they create an inviting place.

These principles provide a framework for creating a sense of place for pedestrians by improving existing areas that can be summarized in Figure 12.

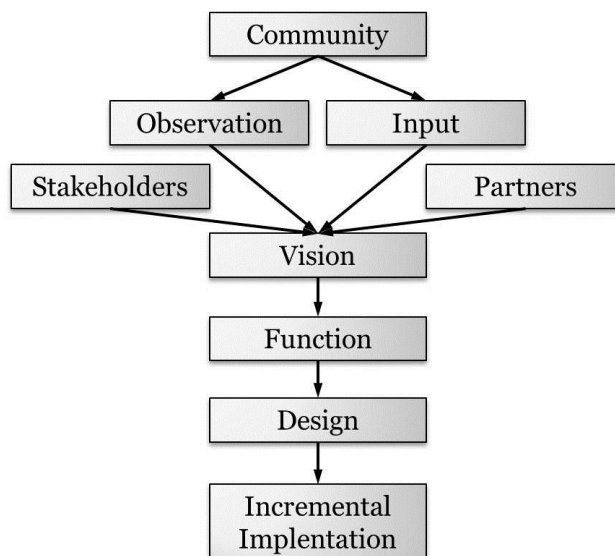


Figure 12 Placemaking Framework

The principles of place making can effectively bridge several of our themes through a physical result. At the connections between the road and river, historic and heritage aspects of the corridor can be incorporated while involving the community in a way to produce pedestrian environments. There will also be indirect results of increased activity, necessitating transportation and transit improvements and supporting development.

Many western cities are recognizing the importance of pedestrians, even in car dominated cultures. Pedestrian-only zones, road diets, and street conversions to pedestrian plazas are examples of changing mind sets. European cities are moving towards cities completely free of automobiles and world-class cities such as New York and London pride themselves in their ability to travel without the automobile.



Figure 13 Pedestrian Infrastructure in Ahmedabad



Figure 14 Pedestrian Infrastructure in Ahmedabad

Transit Corridor Design

Our designs have been created under the assumption that an elevated rail will be built down the middle of Ashram Road. One of the biggest issues associated with elevated rail in the aesthetic degradation it can bring to a streetscape. For our transit designs, the case study of the Paris Viaducts were used.

Case Study: Viaduc des Arts, Paris, France

The Viaduc des Arts in Paris, France houses over 50 artisans providing specialized goods and services. It is used not only as a showcase of French art craft but also as a control of traditional manufacturing techniques. Over 60 arcades of shops, studios, workshops and galleries stretch about 1.5 km from Reuilly to Bastille. Artisan studios are housed in the archway of a 19th century railroad viaduct along Avenue Daumesnil. The viaduct was refurbished in 1990 and opened in 1994. Since that time, it has become a tourist attraction for visitors and a source of pride for Parisians. In similar fashion, the elevated metro of Ahmendabad can house vendors and artisans, selling both traditional wares and contemporary products. This can be used as a means of preserving traditional industry tied to the river as well as create economic opportunity in the central business district. It also provides an opportunity for the city and state to receive return on investment by renting ground leases on the metro property.



Figure 15 Viaduc des Arts



Figure 16 Viaduc des Arts



Figure 17 Viaduc des Arts

District Phasing

The stark differences between our delineated districts have created the necessity of phases in the transit design. Figure 18 illustrates the differences between the transit as it runs through the CBD, the Transitional District, and the lack of transit through the Historic District. The Central Business District contains enclosed shops under the rail in the fashion of the Paris Viaducts. The Transitional district, due to its lower density and more residential development, would have open air courts under the rail. This area would be a public space suitable for vendors and other informal businesses. The historic district is not well suited for heavy rail, due to the negative externalities associated with it such as noise, pollution and commuters. In this area we have made a design recommendation to slightly shift the current proposed alignment of the rail line. This will be discussed in a later section.



Figure 18 Transit Design (from right to left: CBD, Transition, Historic)

Alignment at Gandhi Ashram

The proposed rail alignment currently turns with Ashram Road at Nava Vadaj Road. Our recommendation is that the rail continues straight at this intersection. It is possible that this will overlap with a BRTS segment. Through the measurements found in the plans, it seemed that the BRTS would take about the same width as the required width for the rail (see Figure 19). This alignment would serve to preserve the Gandhian nature of the historic district and also provide an opportunity to build a multimodal station for an easy connection point for the BRTS and the MRTS. CEPT's proposal, shown in Figure 20 to redevelop the Gandhi Ashram area has also been included in this project. The realignment would be critical for the completion of this proposal.

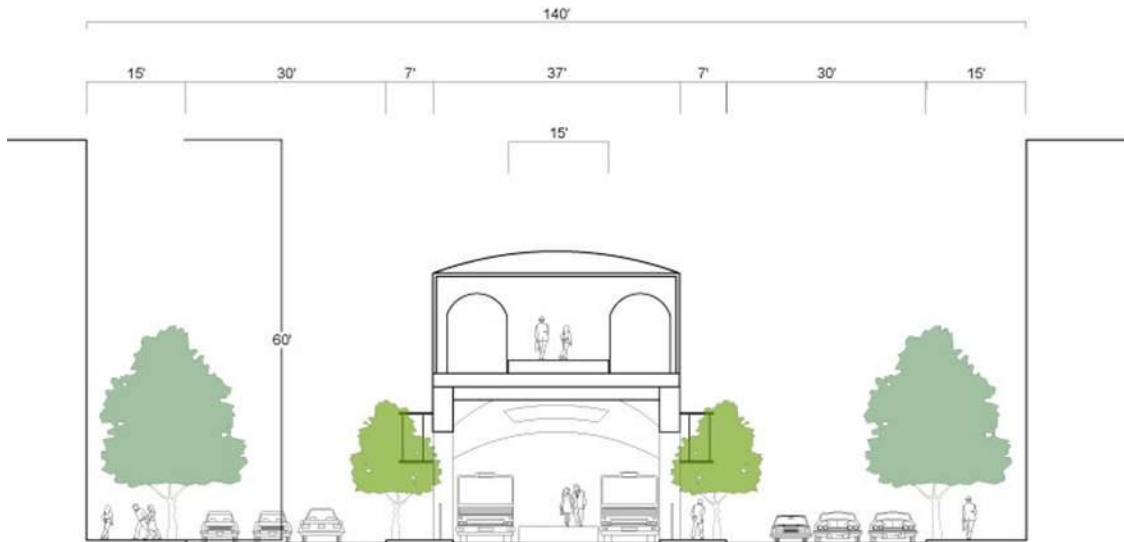


Figure 19 Cross-section of BRTS route with overhead rail

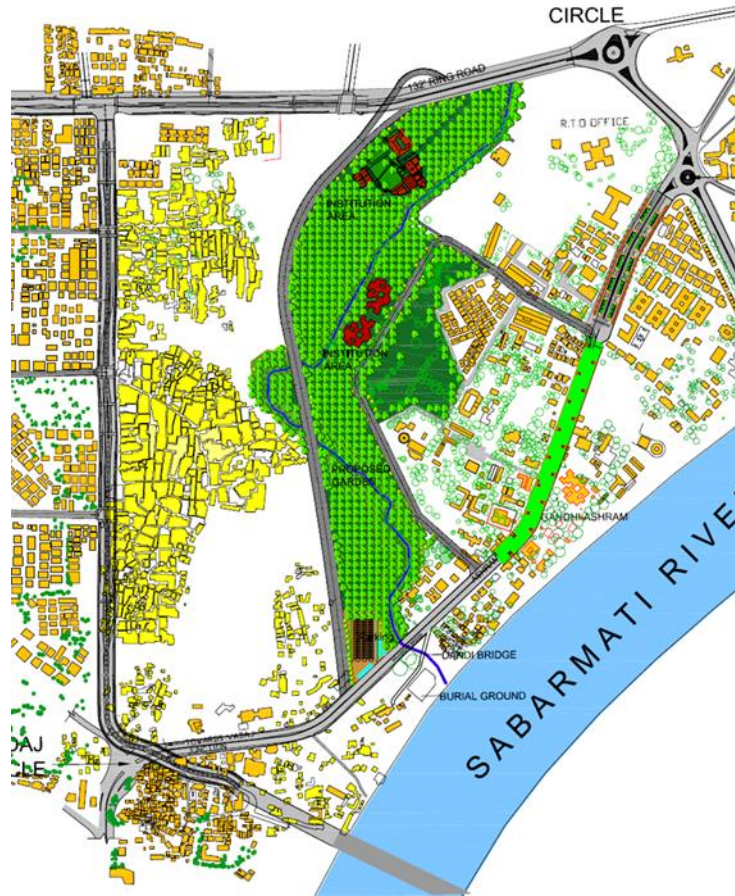


Figure 20 CEPT Ashram Redevelopment Proposal

Land use

Central Business District

A Central Business District (CBD) is an area of a city usually near the inner core where a dense concentration of the business activity and tertiary employment is located. It is designed and developed in order to promote economic growth. Business and commercial uses, and to a lesser extent residential, are all common land uses in CBDs. It may also serve as the governmental center of the city and house public agencies and administrative offices. Urban transport infrastructure usually converges in the CBD, making it highly accessible to businesses and residents.

Due to its central location and accessibility, it is a highly desirable area for land owners, developers, and businesses. The main zoning categories in a downtown are commercial, industrial, and residential. High-density uses are most common in these areas because it establishes the area as a business center. Land is scarce and land values are high due to developer competition for the most accessible land within the CBD. CBD land is highly valuable because it is traditionally the most accessible location for a large population. Developers must be willing and able to pay the high costs of development and usually maximize their investment by building dense, multiple-story buildings.

Building type

As a basis for our design suggestions in this district, we used a proposal created by CEPT, “Land Development Mechanism Guidelines” by Prof. Utpal Sharma, Prof. Sejal Patel, and Mr. Nirav Makwana.

The reason we chose to use this proposal as a base is due to our unfamiliarity with the zoning codes in Ahmedabad, including set back, FSI, and other requirements. This proposal encourages the consolidation of plots and large setbacks for tall buildings, resulting in a Corbusian vision for Ashram Road. Double story skywalks connecting the buildings to each rail station and each other have also been proposed.

Our proposal builds off of these guidelines, but changes the impact they would have on the area. For example, Instead of massive setbacks from the sidewalk, which have the potential to create dead space and intimidate pedestrians, we have suggested that the first five stories of the new buildings could meet the sidewalk, while the additional stories are set back. This gives the pedestrian a lower density feel, while maintaining the high densities of a Central Business District.



Figure 21 Transit and Pedestrian Infrastructure in CBD

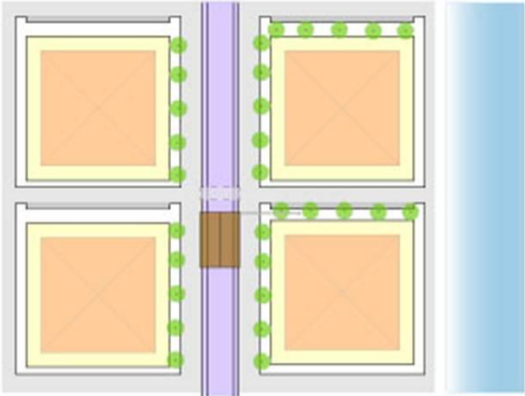


Figure 22: CBD Block Structure

Case Study: Special Public Interest District in Atlanta, Georgia

The City of Atlanta partnered with Central Atlanta Progress, a local business groups supporting downtown growth, to create an expanded and invigorated Special Public Interest (SPI) District that governs the physical growth and redevelopment of Downtown Atlanta. This district, called SPI-1, encompasses all of Downtown Atlanta and is guided by one consistent, expanded zoning code. The zoning is consistent with Imagine Downtown vision, which focuses on the redevelopment and revitalization of Atlanta's center city.

SPI-1 applies zoning techniques that have been developed and tested to encourage dense, mixed-use development to create a vibrant 24-hour downtown environment where people can live, work, meet, and play. Development standards for the street environment enhance the public realm and encourage pedestrian activity. Controls regulate building facades, sidewalks, bulk limitations, building coverage, yard requirements, open space requirements, and height requirements. Standardized sidewalk requirements are upheld throughout district with an emphasis on required elements such as minimum widths, materials, street trees and lighting. Regulations for Supplemental Zones in certain areas enrich the sidewalk experience by encouraging outdoor dining and merchandise displays. Regulations govern the relationship between buildings and sidewalks and streets, such as active ground-floor uses and storefront windows are required and blank walls. Storefront Streets are identified to create primary pedestrian streets with street-level retail and other pedestrian amenities (SPI-1, 2002).

Ashram Road Cross Section

The current cross section of Ashram Road near the Ellis Bridge has three 11 ft. travel lanes in each direction separated by a median fence. There are also sidewalks and access roads on either side. In order to maintain a pleasant street as well as add an overhead heavy rail, we have changed the cross section substantially. As shown in Figure 23, we have removed the access roads, and widened the median. The sidewalks have been expanded from 5 ft. to 12 ft. This was done to accommodate the heavy increase in pedestrian activity due to the higher densities and transit access. The median has been extended in order to accommodate the commercial activities. These commercial activities will switch to open air public spaces in the transitional zone.

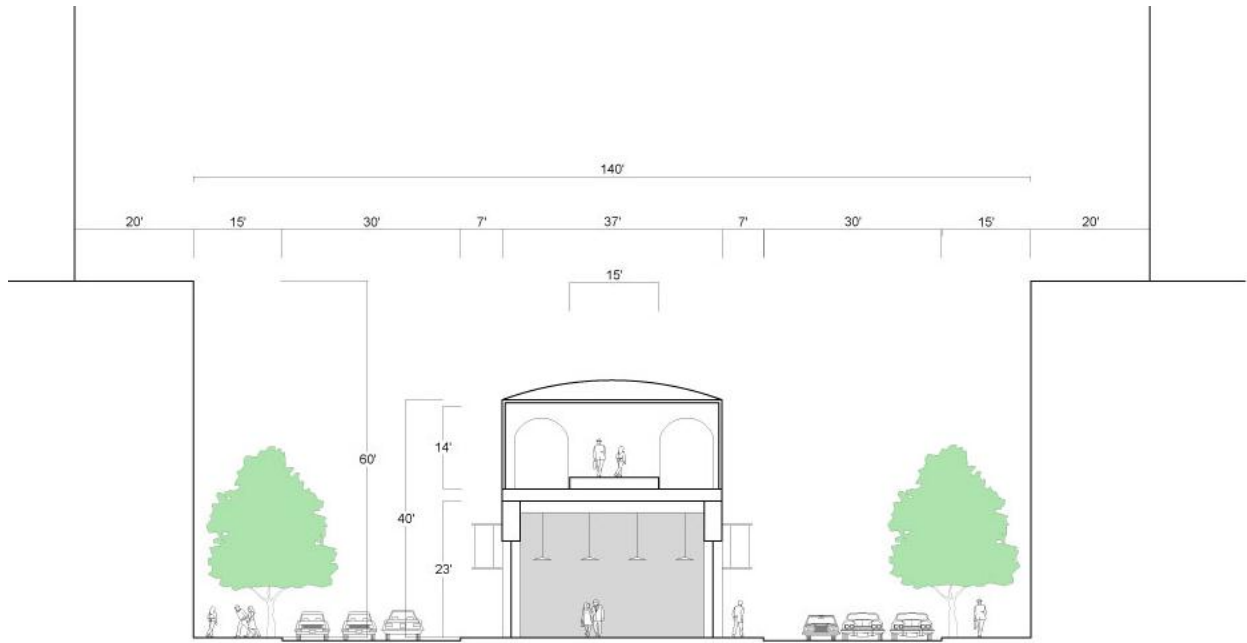


Figure 23 CBD Ashram Road Cross-section

Road to River Connection

Due to the height of the buildings in the central business district, as well as the anticipated need for automobile access to the new road along the river, the connecting streets between the road and the river are largest for this section at 60'. This cross-section includes an 10' sidewalk, 2 11' lanes, an 8' parking lane, and a 20' sidewalk, which includes an exit from the metro.

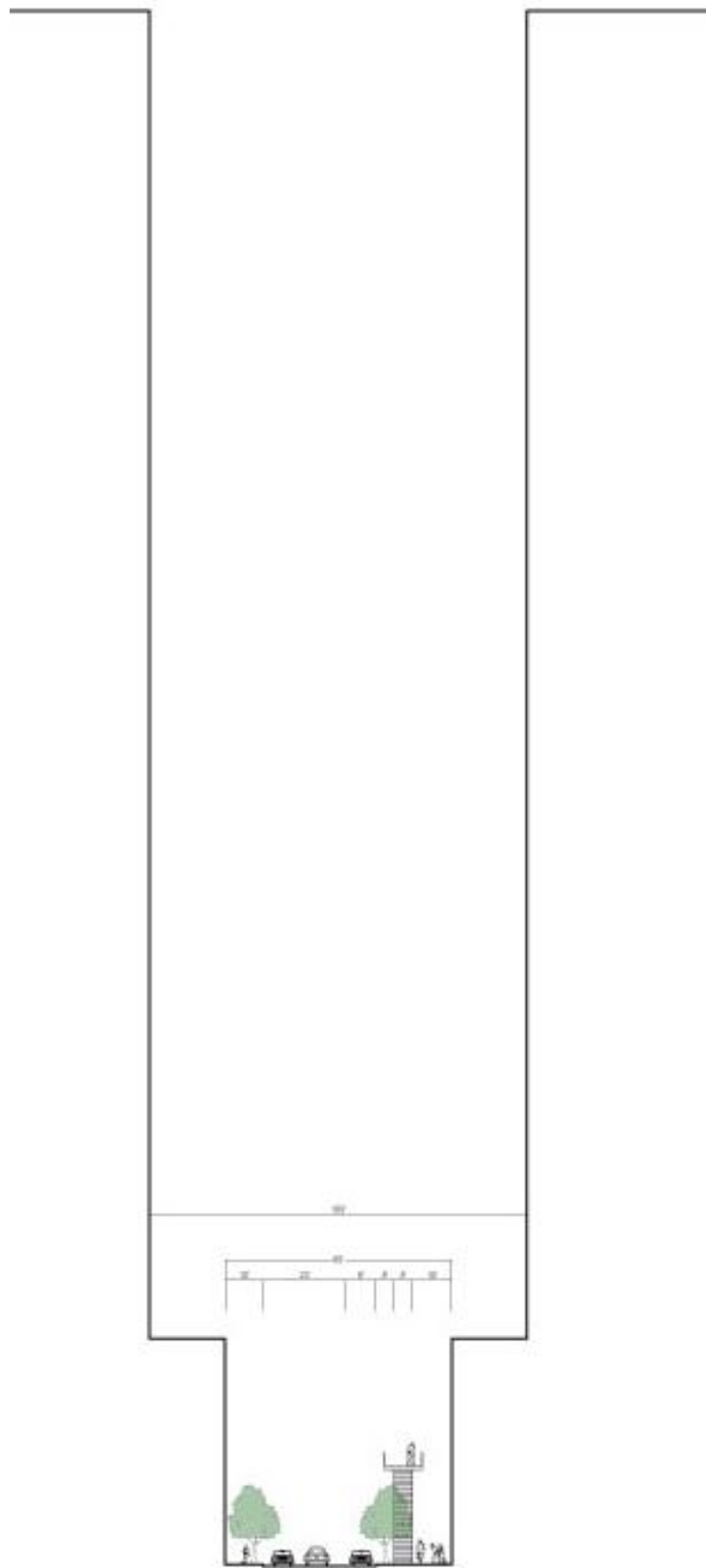


Figure 24 Cross-section of River-Road Connection in CBD

Transition District

The area between the CBD and the historic district serves as an intermediary area where there is less dense-development and more residential buildings than in the CBD.

Case Study: Midtown, Atlanta, Georgia

Midtown Atlanta also has a corridor similar to Ashram Road, Peachtree Street. The scaled images of both corridors are shown in Figure 25. In Atlanta's municipality, an emerging central business district had seen the development of numerous office towers in the 1980s. However, the development patterns evolved as a vestige of the Euclidean (segregated uses and precincts) zoning system that had previously existed in the area. An overabundance of surface parking became prevalent as land owners converted their property to its most profitable use until the parcels would ultimately be consumed by high-rise offices. This created a blighted urban fabric, because at the time, the market dynamics of Atlanta could not possibly sustain such permissive densities of commercial development in its Central Business District.

In the late 1990s, the Midtown Alliance, a local organization of businesses and property owners cooperated with the municipality toward a system of rezoning based on residents' visual preferences for the region. In addition toward redeveloping with an aesthetic rationale, added limitations on property heights and setbacks forced developers to consider uses other than large office towers. Special public interest zoning allows special conditions to be overlaid upon an existing ordinance. In this case, it was used to allow a variety of housing types and land uses to be promoted simultaneously. Such a land use intervention is a gradual and iterative process, and requires at least a decade to achieve results.

Harmonized zoning engenders a more efficient allocation of building heights and sky exposure, and protects the redeveloped property sites from speculation. This is different from the Washington case in that the constraints are imposed "horizontally": qualitatively concerning parcel characteristics and land-use, and resulting in widely varied building heights throughout the core; while Washington's height restrictions operate vertically, tending to result in uniform building heights close to the maximum in the core. Currently, large amounts of vacant land are still interspersed throughout an area that serves as a major office and commercial center, but a Blueprint Midtown II has been proposed as another iteration of the process of infilling mixed-use development. Figure 26 indicates consequences of the Blueprint Midtown zoning intervention. On the left, the situation of the new housing development mixed throughout the overlay district. On the right, susceptibility to land-use or development intensity change.

While Midtown Atlanta did not involve a large provision of affordable housing in the proposal, a locale near or within a central business district should have some housing reservations to preserve low and middle income groups' role in the central city. Both cases described illustrate strategies that can assist the MEGA in its stated goal of mitigating risks of bankruptcy from overbuilding.

Ashram Road - Peachtree Street Comparison

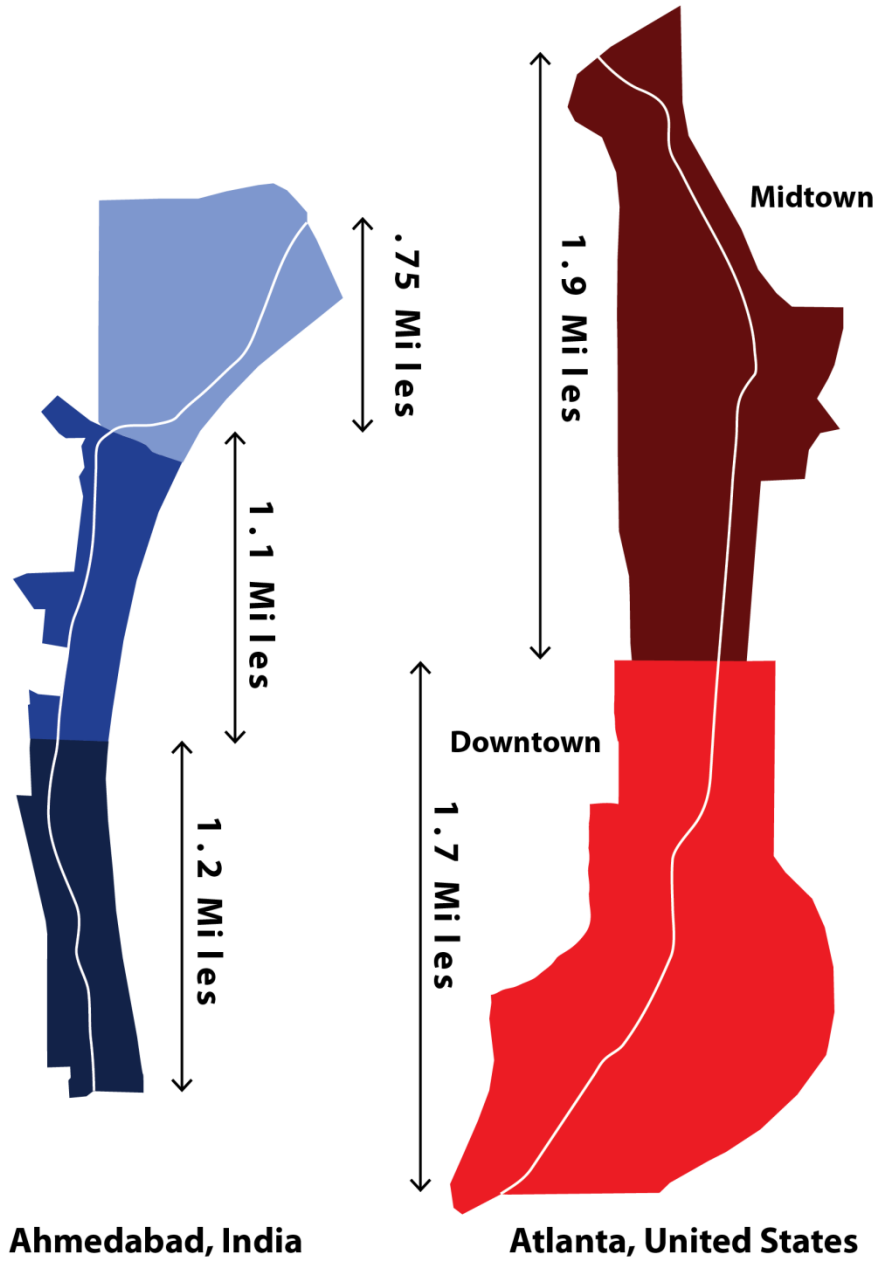


Figure 25: Ashram Road - Peachtree Street Comparison



Legend

- Low Density Residential (2-7 Stories)
- Medium Density Residential (8-12 Stories)
- High Density Residential (12-30 Stories)
- Low Density Mixed-Use (2-6 Stories)
- Medium Density Mixed-Use (7-12 Stories)
- High Density Mixed-Use (12-30 Stories)

Susceptibility To Change

- High Susceptibility
- Moderate Susceptibility
- Low Susceptibility
- No Susceptibility

Figure 26: Midtown Atlanta Mixed-Use Proliferation

Building Type

The district should restrict building heights to between six to ten stories and zoning should be at least 50% residential. The bottom level should continue to serve as retail space to promote street-level interaction and sidewalks should be wide enough to allow for some space for vendors to sell in conjunction with the permanent retail shops.



Figure 27: Transitional Area with Public Space

To incorporate Ahmedabad's unique history, we have chosen to incorporate some aspects of the pol architectural design in the mostly residential sections of the transitional district. While it would be impossible to duplicate the historic polys of the old city and also, not advisable due to accessibility issues, the concepts of puzzle-like alleyways and community courtyards can easily be envisioned in this newer development as seen in . This design will maintain interesting plot shapes, unique building types and a sense of place and community. It is meant as homage to the past while looking ahead to the future.



Figure 28: Transitional District Block Structure

Ashram Road Cross Section

In the transitional section, as discussed earlier, there is an open space suitable for vendors or other public uses. Figure 29 shows the cross section of this area and our design recommendations.

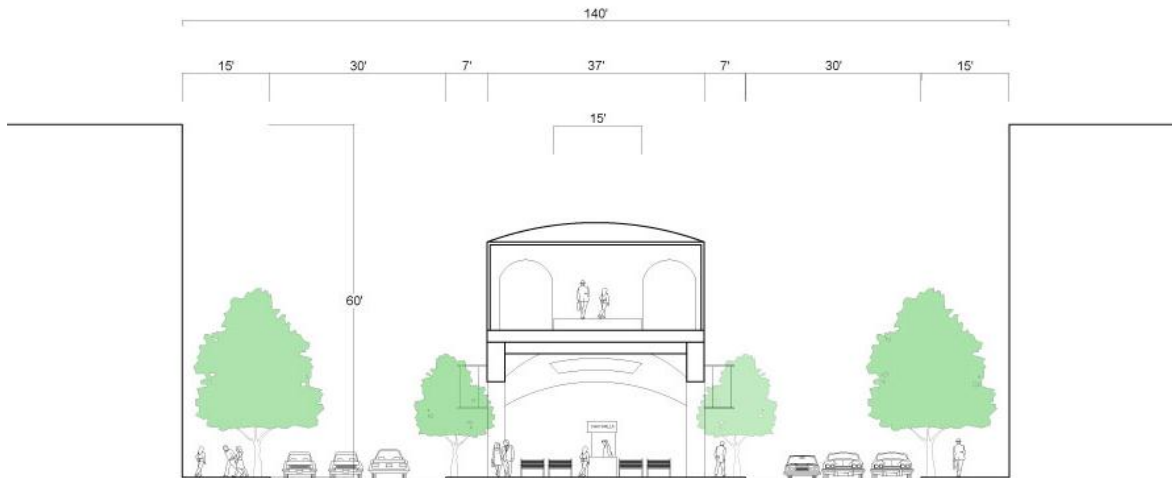


Figure 29: Cross Section of Ashram Road in the Transition Section

Road to River Connection



Figure 30: Sketch up of Pol gate and river road connection

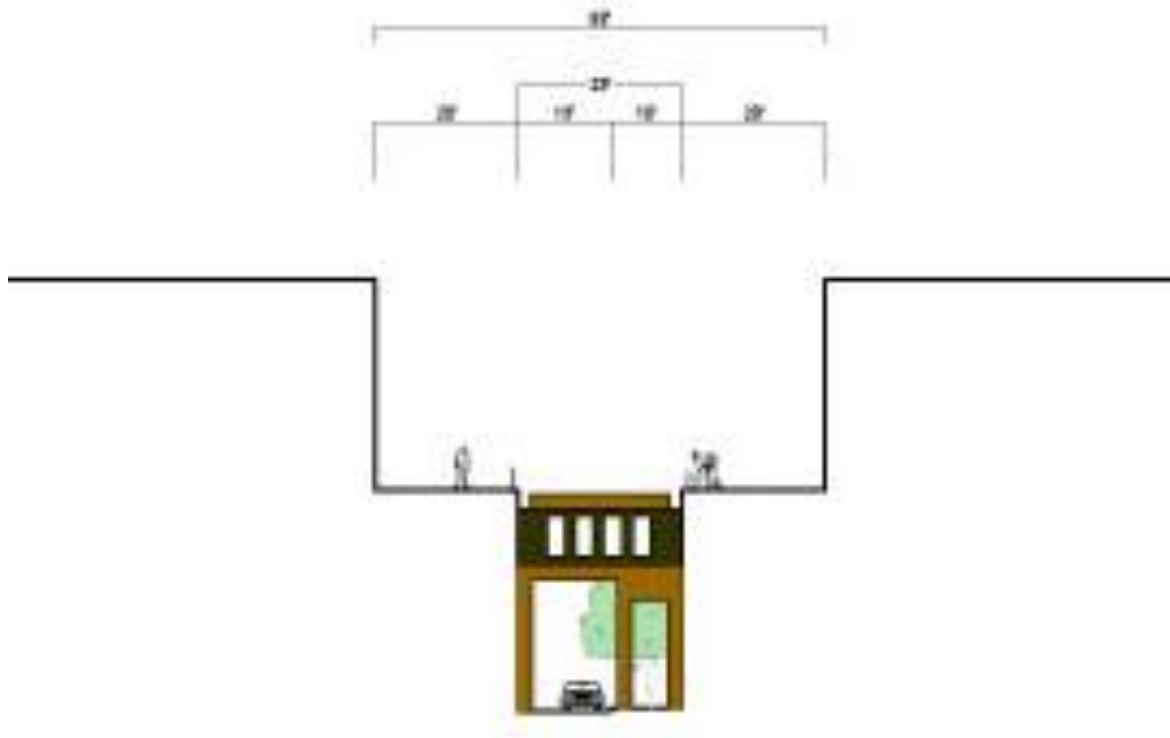


Figure 31: Cross Section of Transitional Road to River Connection

Historic District

Slum/Building Type

The high-rise apartment buildings that are often proposed by planners as alternative slum housing options are rejected by slum communities as acceptable housing options. Single-story, street-level housing is the preferred housing option. This request poses a problem for urban designers who want to build up. Most slum residents prefer to live on their own plot of land, even if it is a very small plot, and would rather live with open sewers and public toilets than lose their street access.

Case Study: Quinta Monroy, Chile

In 2003, the Chilean Government approached architects at to design a solution for how to settle 100 families who have been illegally occupying the 5,000 m² site of the Quinta Monroy in the center of Iquique, Chile for the past 30 years. The goal of the project was to settle the families in the same site, instead of displacing them to the periphery. The resulting Quinta Monroy residential development, designed by Chilean architects from Elemental architecture, was completed in 2004 and includes 93 for structures (Arevena, 2008). The project was completed in nine months with a budget of \$204 per square mile (Quinta Monroy / Elemental, 2012).

The site design uses row houses made of concrete and cement bricks, rather than free standing houses, in order to make efficient use of the land. The width of the lot the same as the width of the house, which uses less space. The goal was to achieve high density without overcrowding and keep housing prices affordable. A house is expected to increase its value, but in most cases social housing is

viewed as an expense, not an investment. Elemental identified a set of design conditions through which a housing unit can increase its value over time without having to increase the amount of money of the current subsidy. If a subsidy can add value over time, it could promote upward social mobility. The image below shows the completed Quinta Monroy residential development.



Figure 32: Slums in Quinta Monroy

Road to River Connection

The Dandi Bridge will be the northernmost of our road-river connections. This is planned as an alternative to be explored shortly after the implementation of the metro rail project. Hence, the area across the creek does not picture the build-out of the Sabarmati Riverfront Development Corporation's project in Figure 33. The historical resonance of the Dandi Bridge currently stands as only its name, but we intend for the Ashram Trust to take over the task of commemorating the departure of the satyagrahis from Gandhi Ashram toward Dandi in 1930. Gandhi addressed the satyagrahis near the southwestern terminus of the bridge, although he did not traverse the riverbed until reaching a more southern locale.

The walkways of the bridge can be redecked with either wood or another porous and durable material. The metal superstructure of the bridge has been repainted with the national tricolor, with another color (or the base color) underneath the main gangway/right of way/ bridge crossing. The creek below the bridge should be restored, with the refuse removed and new infrastructure for drainage and recreation to be put in place. This will transform existing infrastructure into an enduring community asset.



Figure 33: Redevelopment of Dandi Bridge

Public Participation

One issue that encompasses all aspects of developing Ashram Road is determining the public resource needs for each fraction of the community and evaluating the impact of mobilization on public policies and living conditions. Numerous key individuals, groups, and organizations are likely to have a vested interest in the future development of the Ashram Road corridor. Each group or stakeholder will likely not be affected the same way; some may benefit while others are adversely affected by developments that occur in different sections of the corridor. For this reason, a range of representatives with different perspectives and interests should include in a public participation process. Residential quality, cultural vitality, and economic dynamics have improved, but the underprivileged remain segregated and deprived relative to the majority white population. Therefore, the support and involvement of the public sector is needed in conjunction with community-based organizations to allow communities better access municipal power in order to further grassroots efforts. The importance of social inclusion is elaborated in Appendix A.

Public participation should be utilized to engage residents and business owners in the Ashram Road corridor, as well as public officials, planners, and other key stakeholders, in shaping the development of Ashram Road. Public participation, though not typically a tool utilized by AUDA, will help to minimize controversy and negative impacts and is key to prioritizing which services are the most needed in the community. Additionally, participation and investment in the project can evolve into a long-lasting effort to promote awareness and prevention of activities that could lead to the corridor's degradation. A public participation program for the Ashram Road Corridor would best be managed by an independent non-governmental organization, under a contracted agreement with AUDA. The public participation program should be conducted independently by this organization. The organization will interact with key stakeholders through an advisory board, which will include one representative from each of the identified stakeholder groups. The board addresses the issues and the areas where there

are conflicts of interest. The board can then deliver recommendations to AMC, or whatever governmental entity is overseeing that portion of on the project. Additionally, the AMC should work to establish a community support organization that incorporates local leadership into its programming so that the organization and information sharing can continue throughout the corridor development.

References

- Ahmedabad City Development Plan. (2006). Prepared By Ahmedabad Municipal Corporation and Ahmedabad Urban Development Authority.
- Anand, Shriya. (n.d.). Best Practices in Slum Improvement: The Case of Ahmedabad, India. Development Innovations Group, Centre for Development Finance, & Institute for Financial Management and Research, Eds.
- Arevena, Alejandro. (2008). Quinta Monroy. De Zeen Magazine. Retrieved from <http://www.dezeen.com/2008/11/12/quinta-monroy-by-alejandro-aravena>.
- Beard, Victoria A., Faranak Miraftab, and Christopher Silver. (2008). *Planning and Decentralization: Contested Spaces for Public Action in the Global South*. London: Routledge.
- Bollens, Scott A. (2005). *On Narrow Ground: Urban Policy and Ethnic Conflict in Jerusalem and Belfast*. New York: State University of New York.
- Castells, Manuel. (1983). *The City and the Grassroots: A Cross-cultural Theory of Urban Social Movements*. Berkley: University of California Press.
- Gaffikin, Frank and Mike Morrissey. (2010). Community cohesion and social inclusion: unraveling a complex relationship. *Urban Studies*. 48(6).
- Inness, Judith E. (1996). Planning through consensus building. *Journal of the American Planning Association*. 62(4) 460-473.
- Merrifield, Andy and Erik Swyngedouw. (1997). *The Urbanization of Injustice*. New York: New York University Press.
- Sabarmati Riverfront. (2001). Sabarmati Riverfront Development Corporation Limited. Retrieved from <http://www.sabarmatiriverfront.com/2/project>.
- Sandercock, Leonie. (2003). *Cosmopolis 2. Mongrel Cities of the 21st Century*. Chichester: Wiley.
- Sandercock, Leonie. (1998). *Towards Cosmopolis. Planning for Multicultural Cities*. Chichester: Wiley.
- SPI-1. (2002). Downtown Special Public Interest District Fact Sheet Z-07-38, Retrieved from http://www.atlantaregional.com/File%20Library/Land%20Use/lu_coa_spid_zoning.pdf.
- Sharma, Utpal, Sejal Patel, and Nirav Makwana. (n.d.) Land Development Mechanism Guidelines. Center for Environmental Planning and Technology.
- Sivaramakrishna, Kallidaikurichi C., Amitabh Kundu, and B. N. Singh. (2007). *Oxford Handbook of Urbanization in India*. Oxford University Press.
- Thomas, June M. (2008). The Minority-Race Planner in the Quest for the Just City. *Planning Theory*, 7, 227-236.
- Quinta Monroy / Elemental. Arch Daily. (2012). Retrieved from <http://www.archdaily.com/10775/quinta-monroy-elemental/>.

Appendices

Appendix A: Social Inclusion

Henri Lefebvre, whose philosophical writings addressed the social production of space, proclaimed that acts of contestation and political action revolve around the meaning and appropriation of place and space. Places where everyday life occurs are an elemental source of social transformation and empowerment. Every empowering political strategy involves a spatial strategy, because the struggle is not just in a space, but for a space. Edward Soja expounds upon this concept with the idea of “thirdspace,” the lived, interstitial space that is simultaneously concrete and abstract. Cities spaces are continuously evolving and expanding based on social and cultural factors, and can be used as a means to give rise to justice and empowerment. Spatial exclusivity is often built on pre-existing unequal power to reinforce the dominant social group. The separation of the poor and wealthy into separate insulated enclaves is commonplace in most urban areas. The urbanization of injustice is manifested in implicit and explicit forms of social control drive the poor into less desirable parts of the city, while the wealthy withdraw to gated communities. Urban renewal projects have been spearheaded to address poverty, homelessness, and unemployment, but disempowered citizens face exploitation by corporate capital, domination and exclusion by state bureaucracies, and oppression by dominant social and cultural forces (Merrifield and Swyngedouw, 1997).

While promoting integration is an integral part of community building, inequality can still occur in spatial form and infrastructure development. Development projects may not be evenly distributed between areas of high and low socio-economic status, or between the inner city and outer city. A lack of concern for the minority groups and their ability to influence land control can negatively impact the sense of community felt by those groups. Spatial form can be used to fulfill basic resource needs, contribute to the common good, and promote a socially-just geography that can reduce inequality (Bollens, 2005).

Local solidity can also deter inclusion in greater community. Feelings of self-sufficiency within the immediate area can result in segregated population clusters and result in cultural territoriality that can constrict and divide urban spaces and isolate minority populations (Bollens, 2000). Community cohesion, the connection between micro-communities or neighborhoods and their integration into the greater community, is an integral part of community building. Urban policy that focuses on community building, rather than city building, promotes public services, economic development, and political action within a community can strengthen groups bonds with the greater community (Sandercock, 2003).

Planning relies largely on mean-to-ends rationality, while planning for social equity would perhaps best be approached by using people-centered, ground-up, community-based planning and empowerment. In order to achieve this, a multicultural literacy must be developed to access alternative means of knowledge. Planners must acknowledge there are multiple publics in public interest and community (Sandercock, 1998). The needs of minority cultural communities can be overlooked because of the cultural distance between ethnic minorities is far from the host community. This cultural deprivation could lead to more close-knit community cohesion because that local community becomes a refuge amid urban inequalities (Gaffikin, 2011).