



GRANT ROAD *Improvement Plan*



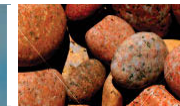
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Mobility

Vitality

Sustainability



October 2010 Design Concept Report



October 2010
KHA Project # 098134001

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Special thanks are extended to representatives of Grant Road neighborhoods and Grant Road businesses, and to the community for participating and providing thoughtful input at Grant Road workshops, open houses, and community conversations.

DEDICATION

The Grant Road Improvement Plan is dedicated to the memory of Lynn Slagle who served as Task Force facilitator.

Grant Road Improvement Plan: Oracle Road to Swan Road
Design Concept Report

October 2010

Prepared for
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EXECUTIVE SUMMARY

Project Need and Objectives

Funding for the Grant Road improvements between Oracle Road and Swan Road Plan was authorized in May 2006 with the passage of the Regional Transportation Authority (RTA) twenty-year, half-cent sales tax. Ballot language for the voter-approved RTA transportation improvement plan states that Grant Road between Oracle Road and Swan Road will be widened and reconstructed to six lanes including streetscape, bike lanes, and sidewalk improvements. RTA project listings include Grant Road as Project 18 with \$166,850,000 in RTA and committed non-RTA funds for planning, design, right-of-way acquisition, and construction. Grant Road is designated for reconstruction over three implementation periods of the RTA Plan that spans 15 years.

The goals of the Grant Road Improvement Plan is to create a state-of-the-art multi-modal transportation corridor that integrates “best practices” for multi-modal access and design sensitivity within the unique context of Tucson’s Sonoran Desert region. In addition, it is the goal of the City to clearly demonstrate environmental and economic sustainability and integrate these features into the planning, design, and construction of the project. To this end, the City of Tucson required that the project be planned and designed using a context sensitive solutions oriented approach. The ultimate design of the roadway will be one that provides convenient access for pedestrians, bicyclists, transit users, and vehicles. It should integrate pedestrian-oriented urban design opportunities with the roadway design. The road should be friendly to cross by foot and bike, and serve to better unify neighborhoods on either side of Grant Road.

Planning and Preliminary Design Process

The City of Tucson selected the Institute of Transportation Engineer’s proposed recommended practice, *Context Sensitive Solutions in Designing Major Urban Thoroughfares for Walkable Communities*, for planning and preliminary design of the Grant Road Improvement Plan. The Context Sensitive Solutions (CSS) process, seeks to combine the art and science of developing places (including streets) in harmony with surrounding areas. CSS seeks to balance safety, mobility, community, and environmental goals in planning and designing a transportation project. It involves the early and continuous interaction with various community groups as stakeholders, uses an interdisciplinary team tailored to project needs, and addresses all modes of travel. It applies flexibility inherent in design standards and incorporates aesthetics as an integral part of planning and design.

Phase 1. Technical Assessment, Visioning, Design Concepts, and Roadway Alignment Concept

In Phase 1, an extensive public involvement plan was implemented and a series of technical assessments were prepared to serve as input to the Task Force in developing a vision statement and guiding principles. This was accomplished during the 10-month period from May 2007 to February 2008. The remainder of 2008 was devoted to developing design criteria, design concepts, and a conceptual roadway alignment that was approved by Mayor and Council in January 2009.

Phase 2. Preliminary Roadway Design and Community Character & Vitality Plan

In Phase 2, development of Preliminary Roadway Design Plans and a Community Character and Vitality Plan were prepared in parallel during the period February 2009 through fall of 2011. Preliminary roadway design refined and advanced the conceptual roadway alignment approved by Mayor and Council in January 2009 into an initial geometric roadway centerline for Grant Road. Preliminary roadway and associated right-of-way plans were developed for Grant Road infrastructure including roadway, drainage, access, intersections, landscape, and utility improvements. During preliminary design, support was provided to the City Real Estate Division in the form of property access design, mitigation for property impacts, and the legal descriptions for affected properties. The City Real Estate Division was responsible for property acquisition for Grant Road improvements. The outcome of Phase 2 design activities is a Design Concept Report, preliminary (30 percent) construction plans, construction cost estimates, and reconstruction sequencing plan. The 30 percent design plans are available in a separate plan set titled *Grant Road, Oracle Road to Swan Road, Roadway Improvements, 30% Construction Plans*, dated August 2010. The Final Design Concept Report contains Roadway Plans and Typical Cross Sections in Appendix A. The 30 percent construction plans prepared in Phase 2 will be advanced by the City through contracts for final project design and right-of-way acquisition.

Community character and vitality planning defines an overall vision for the future land uses that front onto Grant Road, as well as provide policy direction for the reuse of excess properties that are acquired for the Grant Road improvements.

Citizen Task Force

A 19-member Citizen Task Force was formed and approved by Mayor and Council to develop, evaluate, and select alternatives and to develop stakeholder-supported project recommendations for consideration by Mayor and Council. Task Force members were also tasked to provide effective communication between the neighborhoods, businesses, and other stakeholder groups they represent.

The Citizen Task Force represented the following groups and communities.

- Neighborhood Associations
- Businesses
- Citizen Transportation Advisory Committee
- City Manager’s office
- Disabled community
- Alternate modes community
- Regional travelers
- City Planning Commission

Vision Statement and Guiding Principles

The Vision Statement and Guiding Principles for the Grant Road Improvement Plan were created using extensive public input, technical data, and the Task Force understanding of the project goals. It was

finalized at the February 19, 2008 Task Force meeting. The Vision Statement and Guiding Principles guided the planning and preliminary design of the Grant Road Improvement Plan.

Public Involvement

The context sensitive solutions approach used to develop the Grant Road Improvement Plan combines the multi-modal transportation context with the contexts of the natural and built environment and community values obtained through a public involvement process. As a result, public involvement and education were integral elements of the Grant Road Improvement Plan and resulted in broad-based public support for the Grant Road Improvement Plan.

Existing Conditions

Grant Road between Oracle Road and Swan Road features two travel lanes in each direction separated by a two-way left turn lane, narrow bike lanes, discontinuous sidewalks, inconsistent bus stop amenities, over 400 driveways, and seven congested major intersections during the peak commuter period. On either end of the project, Grant Road is a divided six-lane arterial.

Land use along Grant Road has many assets including independent businesses, ethnic diversity, a range of non-profit and community organizations, specialized retail and services, popular restaurants and bars, a unique diversity of housing, walking, bicycling, and transit ridership. However, the current roadway and some of the uses along it provide inconsistent pedestrian and bicycling conditions, a lack of comfortable public spaces and amenities, a lack of community identity in much of the built environment, bad connectivity and challenging conditions for those driving along Grant Road, and an often confusing or haphazard land use pattern.

Recommended Design Concept

The roadway alignment concept approved by Mayor and Council in January 2009 included preliminary right-of-way limits, an conceptual roadway alignment that served as the basis for preliminary design in Phase 2, and innovative and sustainable design concepts for Grant Road which evolved from community involvement and public outreach events.

Phase 2 preliminary roadway construction plans for Grant Road evolved from the preparation of 15 percent and 30 percent construction plans and cost estimates. Fifteen percent construction plans were prepared in the summer and fall of 2009 and submitted to the City of Tucson for review in December 2009. Thirty percent construction plans were submitted to the City in August 2010. Review and comments were logged and included with the 30 percent construction plans and will be addressed as part of final project design. A key input to the development of 30 percent construction plans was a series of neighborhood conversations conducted in early 2009 on mobility, access, and streetscape. In these neighborhood conversations, public comments received on subjects such as neighborhood access to and from Grant Road, neighborhood traffic management issues, location of median openings, local access lanes, and street closures were collected and integrated into the 30 percent design plans.

Included in the 30 percent construction plans are a number of innovative and sustainable design concepts which evolved from community involvement and public outreach events.

Grant Road Innovative and Sustainable Features

Typical Street Sections

- 137-foot Street Section
- 160-foot Street Section

Streetscape

- Landscaping, Streetscape, and Public Art
- Noise Mitigation
- Water Harvesting

Intersections

- Indirect Left Turn Intersection
- Traditional Intersection
- Pelican Pedestrian Crossing
- Toucan Bicycle Crossing

Bicycle Accommodations

- 6' Bicycle Lane with 1' Buffer Stripe
- Bike Spot
- Bicycle Lane Markings in Conflict Areas

Pedestrian Accommodations

- 8' Sidewalk
- 12' Landscape Area

Transit Accommodations

- Enhanced Transit Stops and Plazas

Access Management and Parking

- Local Access Lanes
- Directional Median Openings
- Shared Access
- Cross Access
- Parking Strategies

The following reports were prepared to supplement the Final Design Concept Report.

- *Historic Properties Assessment for the Grant Road Improvement Project, Oracle Road to Swan Road* (Phase 1 Report dated June 2008)
- State of Arizona Historic Property Inventory Forms
- *Relocation Red Flag Analysis, Grant Road: Oracle Rd. to Swan Rd., An Outline of Anticipated Relocation Issues, Actions, and Recommendations for Certain Business Types Located within the Project Limits* (dated November 2007)

- *Transportation Access Management Guidelines for the City of Tucson (dated July 2010)*
- *Weaving Public Art Along Grant Road, Public Art Master Plan (undated)*
- *Summary of Individual Property Impact Mitigation Plans (dated March 2010)*
- *Technical Assessment, Utilities Overview (dated July 2010)*
- *Technical Assessment, Noise Study Report (dated July 2010)*
- *Preliminary Drainage Report (dated July 2010)*
- *Roadway Design Criteria (Dated July 2010)*
- *Construction Cost Estimate Report (dated July 2010)*
- *Community Character and Vitality Plan and Implementation Strategy (under development)*

Opinion of Construction Costs

The construction cost estimate for Grant Road Improvement Plan, based on quantities from the 30 percent construction plans is \$102,120,380 in 2008 dollars. The construction cost estimate used Arizona Department of Transportation (ADOT) 2008 Estimated Construction Costs. Right-of-way acquisition cost estimates were not developed for the 30 percent design plans.

Implementation

The development of a Grant Road reconstruction phasing plan was initiated with the analysis of candidate early intersection projects. Following the endorsement by the Grant Road Task Force of the Grant-Oracle intersection as the early intersection project, a reconstruction sequence plan for the remainder of the Grant Road Improvements was developed and endorsed by the Task Force. The recommended reconstruction phasing plan is summarized in the next table.

Streetscape, Landscape, and Public Art

The streetscape and landscape design of the improvements to Grant Road are key elements in successfully achieving a context sensitive design approach for Grant Road. When appropriately designed these can strengthen the connections between the roadway and adjacent development to create a stronger community character; and they can contribute to pedestrian and bicycle safety as well as to the speed management of traffic along a major arterial such as Grant Road. The integration of public art into the streetscape and landscape improvements can contribute to a meaningful link to community identity and the history of the Grant Road study area.

Recommended Reconstruction Sequence

RTA Construction Period	Grant Road Project	Project Limits	Segment Estimated Construction Cost	Rationale
Period 1: 2007-2011	Oracle Rd. to Stone Ave.	15th Ave. to Castro Ave.	\$11 million	<ul style="list-style-type: none"> • Constructed as the early intersection project • Construction completed in RTA Period 2
Period 2: 2012-2016	Stone to 1 st Avenue	Castro Ave. to Fremont Ave.	\$19 million	<ul style="list-style-type: none"> • Ranked highest need based on crashes and congestion • Construction completed prior to RTA Period 3 in which the railroad underpass at Grant Road and the 1st Ave., River to Grant will be constructed
	Swan Rd	Bryan Ave. to Arcadia Ave.	\$16 million	<ul style="list-style-type: none"> • Swan must be completed before Alvernon segment which is ranked as second highest need based on crashes and congestion
Period 3: 2017-2021	Campbell Ave.	Fremont Ave. to Plumer Ave.	\$15 million	<ul style="list-style-type: none"> • Completion of Campbell segment following the widening of Campbell, south of Grant and 1st Ave., north of Grant will divert traffic on Campbell north of Grant and 1st Ave., south of Grant
	Alvernon Way	Sparkman Ave. to Bryan Ave.	\$15 million	<ul style="list-style-type: none"> • Ranked as second highest need based on crashes and congestion
Period 4: 2022-2026	Country Club	Plumer Ave. to Sparkman Ave.	\$18 million	<ul style="list-style-type: none"> • Grant Road reconstruction completed in RTA Period 4 (2022-2026)

Community Character and Vitality Plan

The Grant Road Improvement Plan includes the creation of a Community Character and Vitality Plan to guide the future land use patterns, urban form of development, and economic vitality of the properties along Grant Road with the intent of taking advantage of the public investment in the expansion of the roadway and the positive improvements of the road’s design character.

The Community Character and Vitality Plan will:

- Refine current area and neighborhood plan land use and design guidance for properties along Grant Road—through an amendment to Area and Neighborhood Plans.
- Guide future land use change to achieve the community’s vision for the form and scale of future development.

- Primarily dealing with non-residential and mixed use properties, not existing single-family residential uses.
- Focus on the relationship and buffering between development along Grant Road and the neighborhoods behind.
- The City will not initiate rezoning of any properties as part of the Grant Road planning effort.

The planning efforts have been guided by the existing area and neighborhood plans for properties fronting Grant Road, the Vision Statement and Guiding Principles of the Grant Road Improvement Plan, and input received from the public during outreach and education efforts.

The concepts that have been explored have also been shaped by technical considerations of real estate development, existing policies and practices, and the urban design and land use expertise of the Grant Road team. The starting point for public input was the community conversations and the existing planning policies. Through a public involvement process and work with the Grant Road Task Force, this led to the definition of the Vision Statement and Guiding Principles for the Grant Road Improvement Plan.

Development of the Community Character and Vitality Plan will be completed in fall 2011, and will include a stand-alone planning and implementation document based on focused input from the community to address key design and policy content, and from the Citizen Task Force to achieve their endorsement of the Plan.

1 INTRODUCTION

1.1 Need for Project

Grant Road widening between Oracle Road and Swan Road is included in the 2030 Pima Association of Governments (PAG) Regional Transportation Plan (RTP) and has been included in prior PAG RTPs. The funding for the Grant Road Improvement Plan was authorized through the May 16, 2006 passage of the Regional Transportation Authority (RTA) twenty-year, half-cent sales tax. Ballot language for the voter-approved RTA transportation improvement plan states that Grant Road between Oracle Road and Swan Road will be widened and reconstructed to six lanes including streetscape, bike lanes, and sidewalk improvements and future land use strategies for adjacent property.

RTA project listings include Grant Road as Project 18 with \$166,850,000 in RTA and committed non-RTA funds for planning, design, right-of-way acquisition, and construction. Grant Road construction is designated for the second, third, and fourth RTA implementation periods beginning in fiscal year 2012 and ending in fiscal year 2026. Planning, design, and limited right-of-way acquisition began in fiscal year 2007.

1.2 Project Goals and Objectives

The goal of the Grant Road Improvement Plan as outlined in the City of Tucson request for qualifications (No. 072023) is to create a state-of-the-art multi-modal transportation corridor that integrates “best practices” for multi-modal access and design sensitivity within the unique context of Tucson’s Sonoran Desert region. In addition, it was the goal of the City to clearly demonstrate environmental and economic sustainability and integrate these features into the planning, design, and construction of the project. Other goals include enhanced multi-modal travel efficiency and connectivity as well as transit and pedestrian-oriented redevelopment.

The City of Tucson required that the project be conducted using a context sensitive solutions oriented approach. The ultimate design of the roadway will be one that provides convenient access for pedestrians, bicyclists, transit users, and vehicles. It should integrate pedestrian-oriented urban design opportunities with the roadway design. The road should be friendly to cross by foot and bike, and serve to better unify neighborhoods on either side of Grant Road.

The request for qualifications required that the planning effort include a roadway alignment study, land use and economic analyses, preliminary roadway/streetscape plans, and urban design concepts and associated land use policies. The Grant Road Improvement Plan includes an extensive public participation process that integrates the preferences and desires of area neighborhoods and businesses into the design of the roadway. The final deliverables highlight the unique and varied character that presently exists along Grant Road.

The guidance provided by the City was used to establish the following specific project objectives.

- Improve travel efficiency, connectivity, and safety for all transportation modes
- Enhance urban and economic vitality and sense of place
- Incorporate design sensitivity and environmental principles within the unique context of the Sonoran Desert
- Demonstrate innovation and best practices for future roadway development

1.3 Study Area and Project Limits

To ensure inclusiveness of the community, a study area for the Grant Road Improvement Plan was defined as Grant Road between Oracle Road and Swan Road and within one-quarter mile of the existing Grant Road centerline. The study area was considered the area in which improvements to Grant Road could influence traffic circulation, safety, and cut-through traffic. The study area boundaries and neighborhoods that are located along the Grant Road are shown in **Figure 1**.

Grant Road Improvement Plan limits have been established and are reflected in the preliminary design plans (**Appendix A**). The project limits are the extent to which construction will impact existing conditions along Grant Road and intersecting north-south cross streets. The project limits shown in the 30 percent construction plans are subject to change as design progresses to final construction documents.

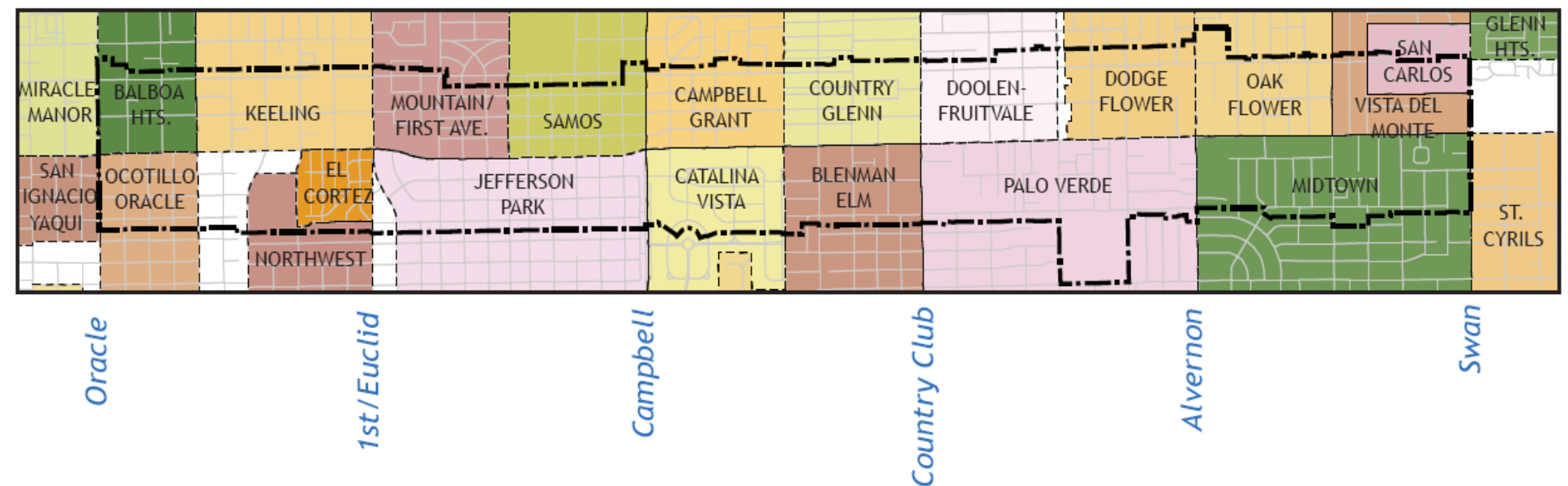


Figure 1: Study Area