

# Planning and Design of a Suburban Neotraditional Neighborhood

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## ABSTRACT

Within the past decade there has been a desire in many urban areas of the United States to create more “livable” communities. One direction of thinking in this “new urbanism” promotes the revival of traditionally styled land-use developments in which people live, work, and shop all within a pedestrian-oriented community. While such communities are common in large urban areas and small rural cities, they are rarely seen in suburban communities. One effort to revive a traditionally styled community within suburbia has taken place in the City of Novi, Michigan. This paper highlights some of the design elements of the project and discusses how the planning and design process influenced the appearance and function of this neotraditional district.

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## INTRODUCTION

Over the past several years there has been a desire in many urbanized areas of the United States to create more “livable” communities. One direction of thinking in this “new urbanism” promotes the revival of traditionally styled land use developments. Within this neotraditional style of land-use, densely spaced residential neighborhoods are integrated with areas of commercial office and retail businesses. One of the objectives of neotraditional neighborhoods is to form self-sufficient communities in which people live, work, and shop all within walking distance. While such land use is common in many large urban areas and rural cities, this type of combined land use is rarely seen in suburban communities. One effort to revive a more traditional style of land development has taken place in the City of Novi, Michigan.

In 1995, the City of Novi along with a private real estate developer began the construction of Main Street. Novi’s Main Street attempted to create a downtown area where none had existed before. While most communities establish or reinvigorate a central business district within existing areas of commercial activity, the Main Street project was conceived on an intersection and a vision. Through a series of public/private funding initiatives, open community forums, and careful planning and engineering, the 22.3-hectare (55-acre) project is nearing completion.

Traditionally styled land use developments are desirable from a number of standpoints. Among the anticipated benefits is a decrease in traffic demand resulting from the pedestrian oriented nature of the development. Neotraditional developments are also pleasing from the standpoint of convenience. The integration of residential and commercial land use into a single community allows residents to live in close proximity to places of employment, shopping, and entertainment. Neotraditional development projects often incorporate decorative enhancement features such as ornate street lighting fixtures, brick paver sidewalks and other land/streetscape amenities. These features allow the neotraditional community to introduce an ambience absent from most suburban communities.

A project such as Main Street has many obviously positive aspects. However, this type of development can be difficult to initiate and implement due to its unique requirements. Main Street has taught many valuable lessons about the engineering, planning, and public financing of neotraditional neighborhood development projects.

Typically, highway engineers are trained to maximize the efficiency of their designs. Geometric elements are designed to maximize capacity, access points are located to reduce conflict points, and traffic control devices are installed to increase the efficiency and highway safety. The design of the Main Street roadway infrastructure was governed by a desire to reduce vehicular mobility and increase pedestrian convenience. Because of this “sub-optimal” design goal, there was a lack of published guidelines and standards to direct the design of the project. Present road design principles do not necessarily apply to the design of neotraditional neighborhoods, especially when they are initiated from “scratch.”

Similarly, municipal zoning codes have evolved to provide more efficient and aesthetically pleasing use of property. The planning of the Main Street community was pursued from the perspective of dense, mixed-use land development. Building densities, parking requirements, and set-back dimensions in use in most suburban communities tend to spread out development and maintain separation between residential and commercial land uses. Such zoning restrictions often preclude dense mixed-use developments such as Main Street. City planners in Novi were required to rewrite existing zoning codes to fit the unique design and performance aspects of this new neotraditional community.

Additional impediments to the project were its construction cost and financing requirements. The type of community desired by the City carried a substantially higher development cost over conventional developments. However, the Main Street project also presented the potential for significant financial gain. Project financing was complicated by the trading of public and private property, the integration of public and private infrastructure systems, and the involvement of both public and private revenue sources. To meet the financial requirements of the project, the City entered into a series of public/private cost sharing agreements. These public/private partnerships also presented difficulties to citizen groups concerned with using public funds to finance private development activities and to potential developers who were concerned with the financial risk of initiating such a costly plan.

Earlier, the Main Street project was the focus of an article published in the American Society of Civil Engineers *Journal of Urban Planning and Infrastructure* (Wolshon and Wahl 1999). This paper adds additional detail into the design aspects of the project and includes additional Figures of the project vicinity that illustrate some of the work that has been recently completed. It is hoped that some of the successful lessons learned from the completion of the Main Street project can be used to assist other municipal planners and engineers who are contemplating similar projects of their own.

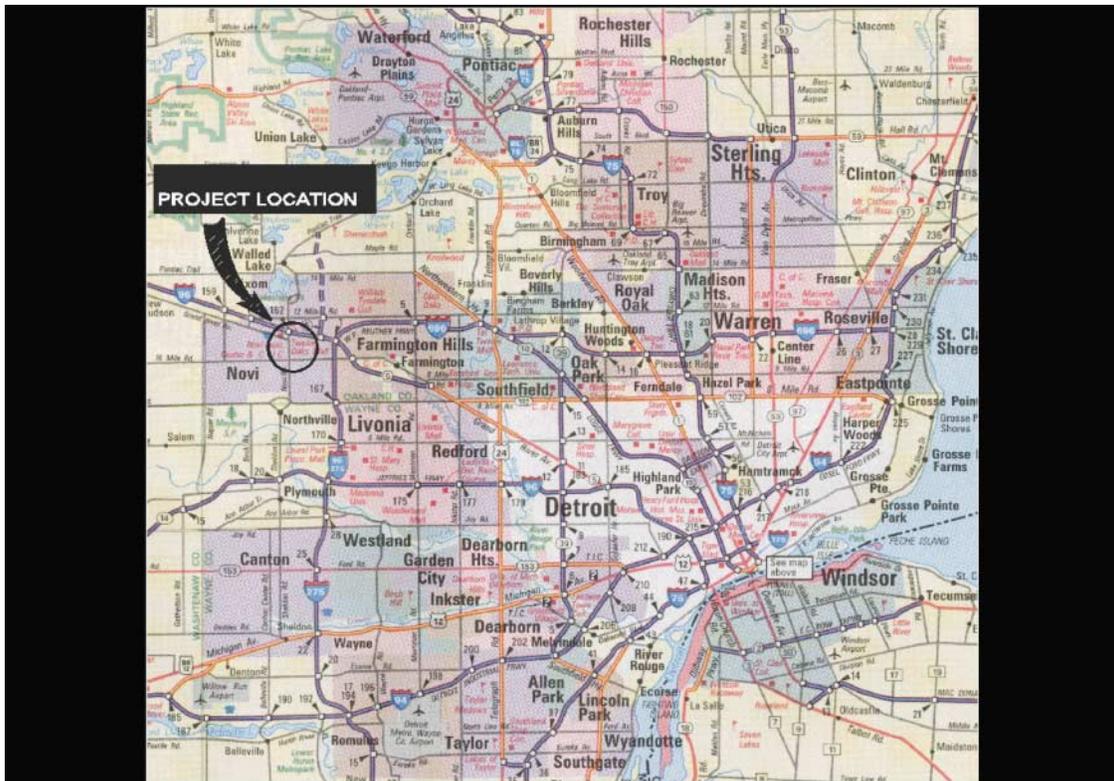
**BACKGROUND**

The City of Novi is a suburban community of approximately 50,000 residents located some 50 kilometers (30 miles) northwest of downtown Detroit (as shown in Figure 1). Novi originated in the 1920s as a stop on the Detroit to Grand Rapids railroad line. The City was officially chartered in 1969. During the past 15 years the city has ridden the crest of an economic development wave to become the fastest growing city in the State of Michigan.

In response to this anticipated growth, the city adopted a master plan for land use soon after the City was incorporated. As part of later versions of the master plan, a framework for a commercial business district in the center of the City, surrounding the main cross-roads of Grand River Avenue and Novi Road, was created.

Along with the rest of the City this city center has experienced exceptional growth and now features an exposition center, a regional shopping mall, restaurants, hotels, and office space. The Town Center District, as it is known, now occupies an area of 2.5 square kilometers (1 square mile) and serves as the commercial hub for the City and one of the largest retail centers in the state.

The Town Center served as the City’s commercial heart; however, the Office of Community Development felt that the City lacked a true central business district and meeting place for residents, workers, and visitors to the City. In addition to this lack of focus, City administrators felt the City lacked a unique identity among the many suburban communities of metropolitan Detroit. This lack of focus and identity has been a problem



(map source: Rand McNally Road Atlas, 1998 Edition)

**FIGURE 1 Metropolitan Detroit and the City of Novi.**

with many suburban communities throughout the United States. A recent *Newsweek* magazine article has criticized what in their view has been a lack of effective planning in most modern suburban communities, stating: “The ‘civic center’ of many suburbs, designed for the convenience of the car, is a strip mall along a six-lane highway” (Adler, 1993). The Main Street concept was initiated by the City’s Community Development Department in 1988 to address these deficiencies.

## PLANNING ISSUES

In any land development project there are a number of factors that influence the final design of the project. In the case of Main Street, a team of individuals from engineering, planning, and landscape architecture were assembled to work out the details of planning and design. The primary planning effort for the project came from the City’s Department of Community Development and was completed over more than a decade. The planning effort also included contributions from the City’s planning consultants, County planning agencies, as well as several citizen advisory groups and civic steering committees. Each of these groups assisted in developing the criteria that guided the project’s ultimate appearance and function.

During the Main Street project planning process the City was also committed to forming constructive partnerships with its own residents and business community. These partnerships allowed input to be gathered from groups of business owners in the immediate vicinity of the project as well as local economic development committees and the Chamber of Commerce. Numerous public forums were also held to gather both input and public support for the project.

One of the primary planning issues to be addressed during the early stages of the project was the development of new zoning ordinances to permit the design of a unique traditional neighborhood community. To accomplish this, the City’s existing Town Center (TC) zoning ordinance was refined to narrow the scope of candidate projects and allow the construction of densely spaced residential neighborhoods. The new zoning ordinance, called TC-1, was written to “promote the development of a pedestrian accessible, commercial service district in which a variety of retail, commercial, office, civic, and residential uses . . .” The TC-1 ordinance was also crafted to encourage combined parking facilities for all businesses and discourage vehicular oriented commercial land uses such as car washes, gas stations, drive-through restaurants that would “have a disruptive effect on the pedestrian orientation of the districts.” The TC-1 ordinance promoted service oriented tenants such as banks, cleaners, law and medical offices, and tailors. This was to establish a codependent connection between the residential and commercial sections of the district.

Examples of the difference between the new TC-1 and the existing zoning are illustrated by the residential and commercial setback distances and densities. The TC-1 ordinance permits the construction of home sites with a separation of 3 meters (10 feet) between buildings and densities of 9 units per acre. This is in marked contrast to most other residential zones within the City. Typical densities for single family homes in Novi are 1 to 2 dwelling units per 0.4 hectare (1 acre), with typical spacing of 7.62 meters (25 feet) between building sides.

The effect of this new zoning ordinance can be seen in the photographs of Figures 2 and 3. These Figures illustrate typical streets within Main Street Village, the residential



**FIGURE 2** A residential street within Main Street Village.



**FIGURE 3** Main Street Village residential area.

community directly adjacent to the Main Street commercial district. Figure 2 illustrates the density of the residential dwelling units as well as the very short front yard setback. Figure 3 shows many of these same zoning aspects as well as several features of the roadway cross-section. Here, the provision for on-street parking can be seen as well as the use of pedestrian walkways and roadside vegetation. Both of these Figures also illustrate the aesthetic qualities of the residential community including the architectural style and construction materials of the building.

Commercial building requirements were also modified to promote increased density. Commercial businesses fronting Main Street were permitted a “zero setback” from road right-of-way boundaries. This was a change from the typical practice of 15.24-meter (50-foot) setbacks required in the TC ordinance and for similar commercial uses elsewhere in the City.

The design of the commercial sector of the Main Street development can be seen in the photograph of Figure 4. Although this photograph was taken during construction and the building facades are partially complete, the use of architectural design features give the visual effect of multiple building units with a single structure. Also visible in the photograph are some of the elements of the Main Street roadway cross-section design including the provision for on-street parallel parking, mid-block bump-outs, planter boxes, trees, street lighting, and brick pavers.

## DESIGN ISSUES

The challenges in the design of the Main Street district were unique. Typically, design engineers are tasked with the job of increasing the efficiency and safety aspects of their



**FIGURE 4** Main Street commercial buildings (under construction).

designs. Highway projects nearly always seek to increase the roadway capacity, decrease the number of vehicle-to-vehicle conflicts, and reduce the amount of pedestrian-vehicle interaction. In the design of Main Street, the design goal was to develop a design to facilitate pedestrian movement and restrict vehicle flow. To accomplish these goals, a “less-than-optimal” design approach to moving vehicular traffic was used. One of the problems encountered in the initial stages of the project design was a lack of available “low-mobility” design standards and practices to guide the design of the project. As a result, many of the design features of Main Street were modifications of older designs or were created to fit this new use.

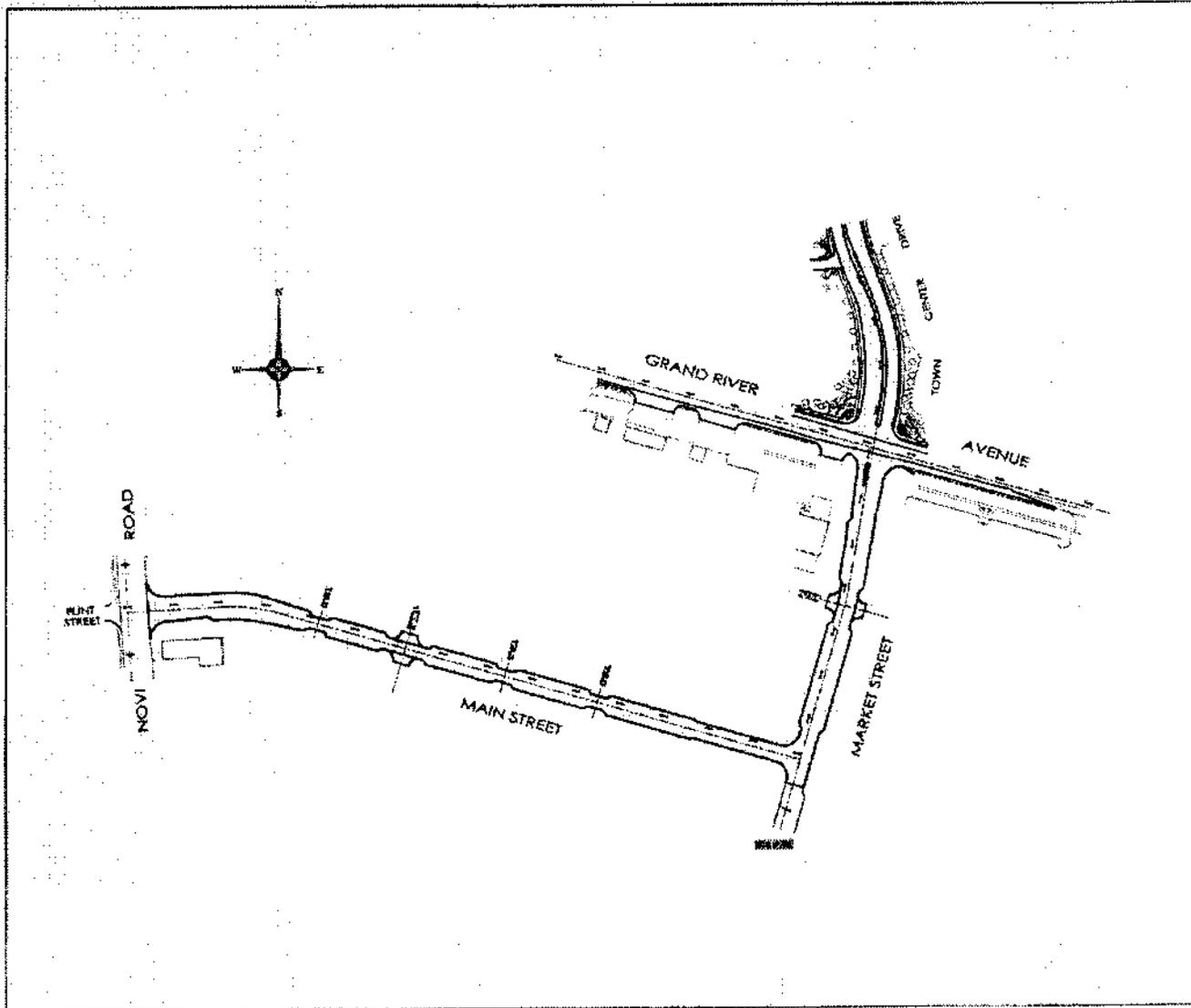
### **Roadway Alignment**

The first step in the design of the road was the selection of a suitable alignment. The Main Street alignment was governed by a desire to create a “Ring Road” encompassing the entire Town Center District. Thus, the alignment had to match the existing segments of the loop road within the other three existing Town Center quadrants. The Main Street alignment can be seen in the plan drawing of Figure 5. This figure illustrates the connection to the existing streets as well as the vehicular and pedestrian crossing locations.

Another critical aspect in the alignment design was the transition from an east-west to a north-south road orientation. Since the selection of this transition had a significant impact on the overall composition of the project, careful consideration was given to this design feature and several alternatives were proposed. Several of these alternatives are illustrated in Figure 6.

The shape of the property within the Main Street quadrant formed an “L.” Aerial photographs and ground surveys showed the best way to achieve a connection between the existing north-south and east-west road alignments was to incorporate a large radius curve or a “T” intersection. Other considerations in the design were the need to discourage high speed traffic movements in the area, the integration of street design to building design, and the preservation of a neotraditional theme. Several alignments were proposed to accommodate both of these considerations. The advantages and disadvantages of each proposal were evaluated based on these and other factors including: the safe movement of pedestrian and vehicular traffic, emergency access, environmental impact, preservation of a “traditional Main Street” ambience, and the need to maximize the amount of useable land.

Alternative 3 incorporated a large radius curve linking the two segments. A curved alignment could be designed to avoid most of the sensitive wetland areas and would reduce the cost of construction. Two independent one-way roads were also suggested. Illustrated as Alternatives 5 and 6 in Figure 6, the separate roadways split opposing traffic streams in the vicinity of the intersection. It was proposed that the area between the roads could be used for a “green space” and landscaped with trees and benches. These curved alignments, while positive in several respects, also had negative features. Among these was a concern that the road would create a convenient by-pass route around the frequently congested intersection of Novi Road and Grand River Avenue. It was also felt that a curved alignment would result in additional intrusion into useable land. For these reasons, all curved alignments were eliminated from consideration.



**FIGURE 5** Main Street road alignment plan.

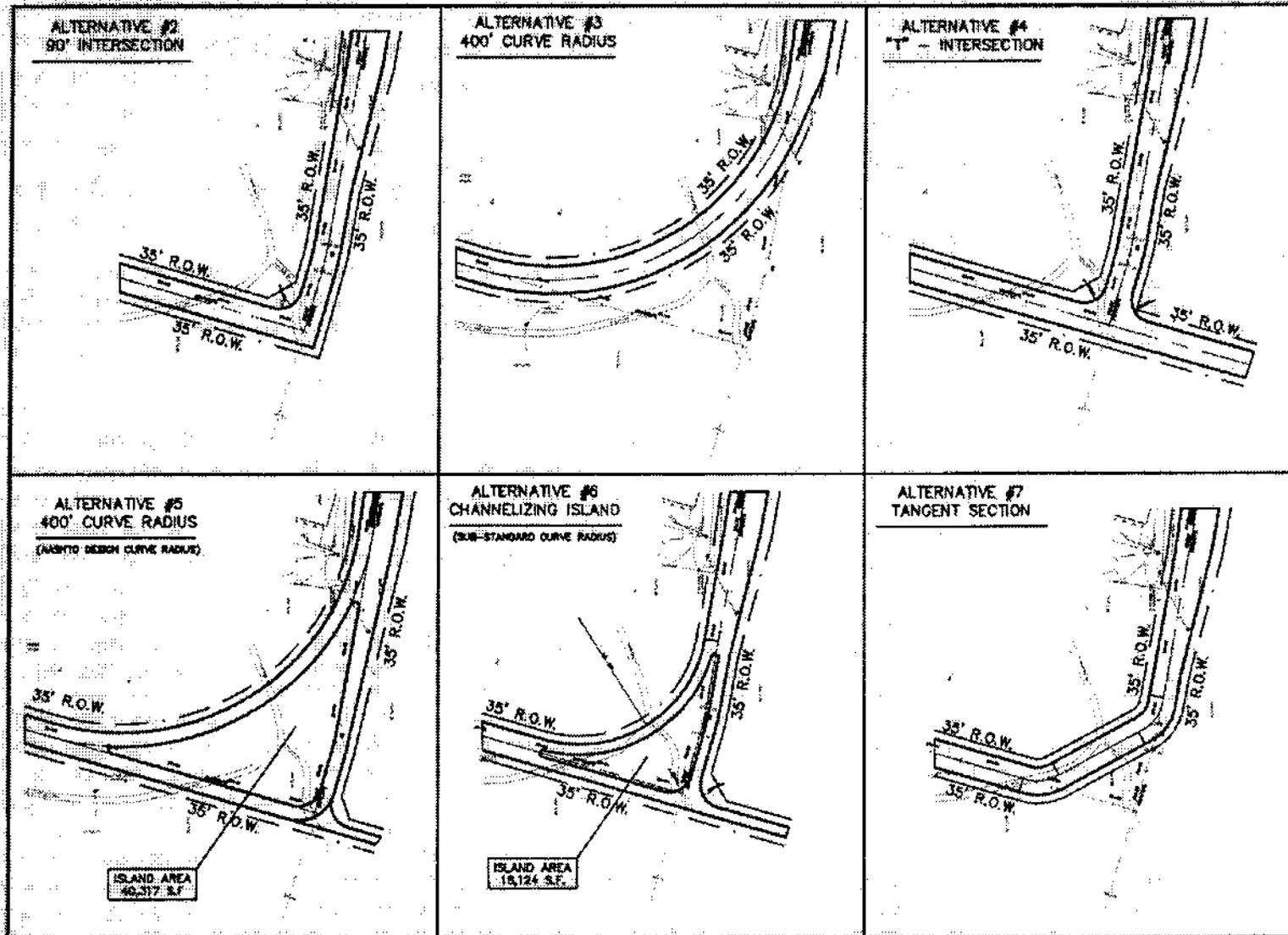


FIGURE 6 Main Street/Market Street intersection design alternatives.

An iterative series of two, three, and four leg intersections, shown as Alternatives 2, 4, and 7, were also evaluated. Based on the evaluation criteria, the three leg intersection configuration, Alternative 4, was found to be the most beneficial. The “T” intersection permitted future development of the land area to the south of Main Street. This is now the Main Street Village residential development shown in Figures 1 and 2.

From a traffic perspective it was felt that a stop controlled “T” configuration would help to reduce operating speeds within the intersection vicinity and would reduce the likelihood of Main Street becoming a by-pass for the Novi Road and Grand River Avenue intersection. From an aesthetic standpoint, the “T” intersection created a focal point for the overall Main Street streetscape plan. This area will be used for a park area which includes a grandstand for special events like parades and festivals which will be held in the area.

The “T” design also created two separate and distinct roadways, an east-west road (Main Street) and north-south road (Market Street). The Market Street reference refers to the fruit and vegetable market which anchors the east end of the project. Prospective businesses found this distinction helpful from the standpoint of creating a separate marketing identity.

### **Traffic Control**

Traffic movements at the Main Street/Market Street intersection were controlled by a three way stop. The installation of a traffic signal at this location was discussed. However, it was felt that the use of an all-way stop would be more appropriate for the low traffic flow/pedestrian oriented nature of the area. A signal might have allowed more efficient traffic movements and less delay; however, the design objective was to reduce vehicular mobility. Thus, the all-way stop was able to accomplish this and it provided full-time right-of-way to pedestrians.

The heavy volume at the intersections at Novi Road and Grand River Avenue dictated the installation of traffic signals. The signals at both of these locations were integrated with the Oakland County FAST-TRAC Advanced Traffic Management System. As such, they feature Autoscope video image detection and the Sydney Coordinated Adaptive Traffic System signal control logic. SCATS capability allows the timing of these signals to be coordinated with signals on the adjacent roadways.

On Main and Market Street the use of traffic signs was minimized. Mandatory signs like speed limit, stop, parking/no parking, and lane use control signs were used only when necessary. Some discretionary signs, such as those relating to pedestrian safety, were also installed. However, the use of discretionary signing was kept to a minimum to create a “greener” environment within the Main Street vicinity. It was also felt that roadside signs could be difficult to see while driving given the large amount of trees, decorative street lighting poles, and displays within the roadside area.

### **Road Cross-Section**

Another important consideration in the design of the Main Street district was the roadway cross-section. The cross-section design was particularly important because it dictated the right-of-way requirements as well as the provisions for on-street parking and sidewalks.

The typical Main Street cross-section followed the TC-1 zoning ordinance and incorporated a right-of-way width of 21.3 meters (70 feet).

Illustrated in the cross-section construction plan drawing of Figure 7, the Main Street travel lanes were 3.96 meters (13 feet) wide. Parallel parking lanes 2.43 meters (8 foot) wide were provided next to the travel lanes. Pedestrians were served by 3.81-meter (12½-foot) sidewalks. The sidewalk areas also housed streetscape elements like planter boxes, trees, and decorative light fixtures. Future plans also call for some of the sidewalk area to be used for seating at streetside cafeterias and restaurants.

The Main Street right-of-way was paved building face to building face, a practice not common in most suburban communities. One disadvantage to this “wall-to-wall” pavement design is that it required installation of utility service under the sidewalks. While considered to be less than ideal, future disruption to the sidewalks would be less obtrusive than closing the road to traffic.

The road cross-section width varied between the Main and Market segments. The additional width provided on Market Street was provided to facilitate left-turn movements. A narrow raised median was also added on the Market Street approach to Grand River Avenue to align opposing left turning vehicles with the existing Town Center Drive north of Grand River Avenue. The configuration allowed a simultaneous left turn phase for opposing left turns from Market Street and Town Center Drive.

While free parallel parking was used in the design, other options were explored. Originally, the Main Street parking was planned to be metered. It was felt that the use of parking meters would discourage employee parking in front of the businesses along Main Street. The employee parking dilemma was solved by the use of restrictive lease agreements which now require employees to park in off-street lots. Angled parking was also considered. However, such a design would increase the overall roadway width and decrease the amount of usable development property.

Another feature incorporated into the Main Street design was the use of paved sidewalk areas that extended into the roadway pavement. These sidewalk “bump-outs,” “chokers,” or “nubs” have been encouraged for use in traffic calming designs. The bump-outs offer many advantages in the design. First, they helped to provide visual separation between the travel and parking lanes on Main Street. This helped to discourage through vehicles from driving in parking lanes during periods of low parking demand. The bump-outs were also coordinated with the architectural and streetscape designs to provide additional pedestrian space between opposing building entrances. Along with pedestrian walkway pavement markings, these areas helped to create clear areas of pedestrian crossing activity. The bump-outs also shortened the crossing distance between opposite sides of the street at all cross-walk locations. Finally, the bump-outs allowed additional space for decorative streetscape features such as trees and brick pavers. On the negative side the bump-out features make snow plowing and other road maintenance projects somewhat more difficult.

## **CURRENT STATUS AND FUTURE PLANS**

Work on the Main Street project continues to progress. By the winter of 1999 the first phase (shown in Figure 4) of the nine phase project was under construction. All of the site infrastructure systems including the water service, storm and sanitary sewer systems,

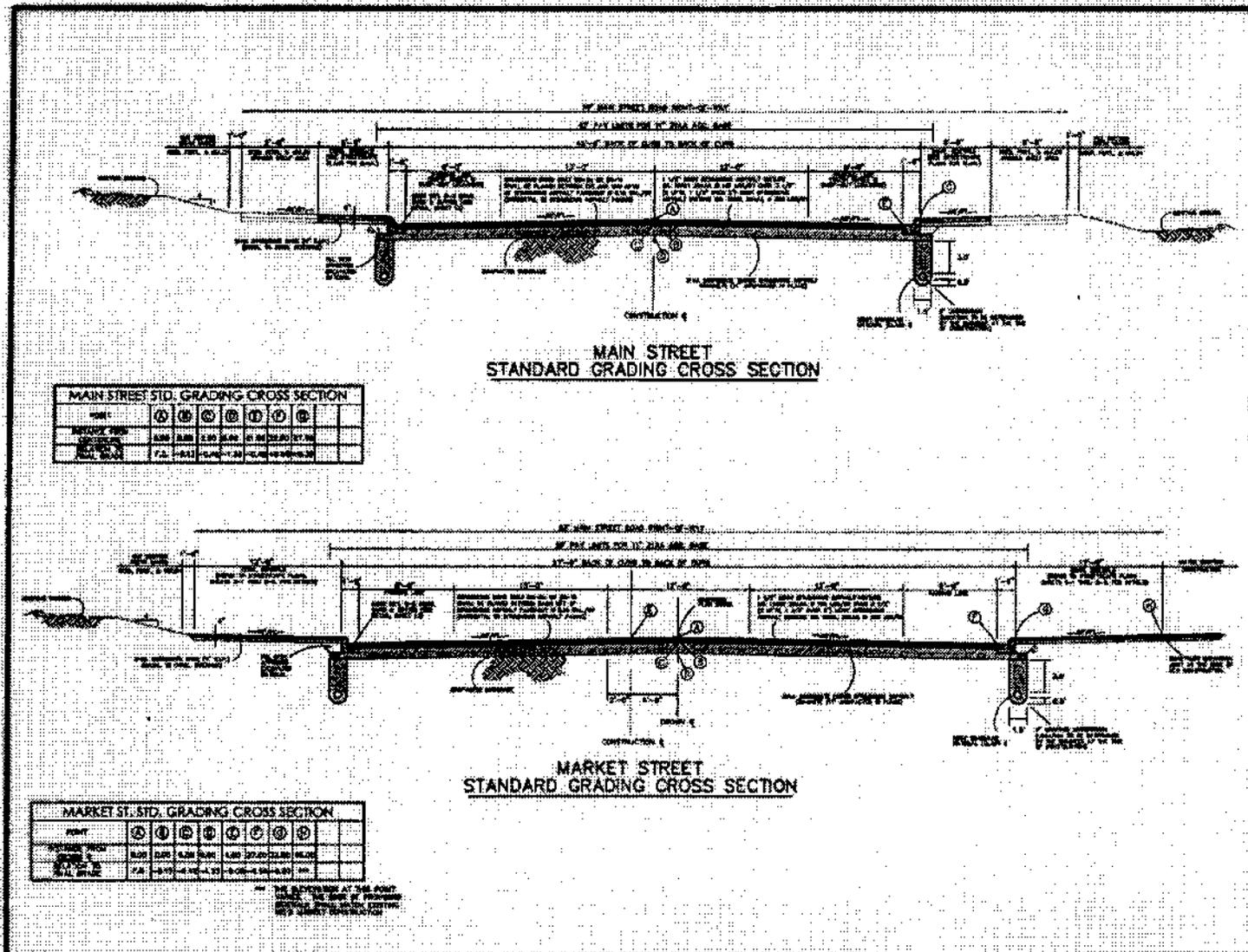


FIGURE 7 Main Street roadway cross-section plan.

roadway, and streetscape features were complete. In addition to these elements, the Main Street Village residential development (shown in Figures 2 and 3) was complete and fully occupied. The anchor tenant food market had been in successful operation since 1995 (see Figure 8). Three of the Main Street outer buildings are either complete or are nearing completion. The micro-brewery and shop plaza (see Figure 9) at the east end of the site have also recently begun operation and have generated a great deal of interest and anticipation for the remainder of the commercial buildings. The remaining 4 of the remaining 8 phases of development have been approved for construction and future plans are now being developed to incorporate a 5-story hotel and a dinner theater within the Main Street vicinity.

The Main Street district is well on its way to become the community focal point that was hoped for at its inception. The Main Street area has hosted three Christmas Walks and was used during the City's annual 50s festivals. Future plans also call for the Main Street areas to become the focal point for future 4th of July celebrations, Memorial Day parades, and the center of activity for upcoming 50s festivals.

The formulation of development plans just outside of the Main Street district is also ongoing. A conceptual design study is underway to evaluate options for the 8.09-hectare (20-acre) parcel west of Novi Road. It is anticipated that this property will become "Main Street West" and will house 65,032 square meters (700,000 square feet) of commercial building and parking space. While considerable obstacles remain, such as the relocation of existing businesses, several real estate developers are interested in the project. Discussions are also underway to expand the existing Main Street district further to the south and east to incorporate more commercial and residential areas.



**FIGURE 8 Main Street East.**



**FIGURE 9 Market Street and Vic's World Class Market.**

Some of these expansion plans have also met with considerable resistance from owners of existing businesses immediately adjacent to the proposed TC-1 district expansion. Most of the land surrounding or adjoining the proposed TC-1 vicinity is currently zoned for light industrial uses. Current property owners feel that an expansion of the existing Main Street area will one day lead to a call for a re-zoning of their properties and ultimately the need to relocate their buildings.

Estimates of future economic impact have estimated that the project will ultimately result in the addition of some 1,200 permanent jobs and 300 new businesses. Another 500 jobs were expected to result from the construction of the project. In addition to the employment opportunities, the project is also regarded as the catalyst to drive future expansion of existing visitor and entertainment businesses in the area. The Main Street community is expected to complement the existing attractions in the City such as the Novi Exposition Center, Motor Sports Hall of Fame, ice arena, and Twelve Oaks regional shopping mall.

The long-term economic viability of Main Street is unknown. Leasing of tenant space in the recently constructed and soon to be completed buildings along Main Street has progressed on schedule. However, no one can accurately predict if the combination of the residential and commercial land uses in a suburban area will be a passing fad or a growing trend. Main Street represents a significant effort to improve the community of Novi, Michigan. The question of whether it can accomplish all of its goals will likely remain unanswered for another five to ten years.

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