Proposed Work Plan

1. Understanding of the Project

This proposal presents Corradino's approach to preparing the 2025 Rochester Hills Master Thoroughfare Plan Update. The work plan has been divided into four tasks. In executing the work, Corradino will coordinate closely with the City Council and Planning Commission as well as the Technical Committee. This includes interviewing, at the project's outset, key agency participants to identify relevant transportation, land use and related issues. The work of each task will be brought to the citizens of the community so they can help shape the project's strategies.

2. The Challenge

The quality of life considerations in Rochester Hills are elevated above those seen in most communities because of the tremendous growth pressure the City is experiencing. But, the opportunity exists to anticipate travel needs for the next 20 years and to ensure that all modes of transportation are appropriately combined in a realistic plan. Roadway improvements and improvements to accommodate those who walk and bicycle are realistic transportation elements that require blending to form an implementable plan. The continuing pressure of upward increases of the price of fuel also make examining the role of transit important for a forward-looking community. But, these improvements can't happen if the policies and infrastructure that permit them are not in place. This study must anticipate the likely patterns of travel by all modes and define how these improvements can be made within the reasonably foreseeable future with legitimate sources of revenue.

Good communication skills are key to building this realistic plan. That is the hallmark of Corradino – being able to take complex issues and translate them into common sense terms; being able to provide high-impact graphics so that a citizen readily understands the message conveyed; and, building credibility by being able to listen and translate the citizens' thoughts into the technical analysis and study products.

The key transportation issues that are facing the Rochester Hills community are many. To demonstrate the ability to understand these issues and to quickly and inexpensively capture an overview of them, a DVD is included with the letter of transmittal.

Task 1: Community Involvement Plan

Purpose

The work of Task 1 develops and implements a Community Involvement Plan that is consistent with the commitment of Rochester Hills to engage its citizens in the planning process. The Community Involvement Plan (CIP) is key to both the integrity of that process and to ensuring the resultant plan conforms to legal mandates and can be implemented.

Approach

The primary objectives of the Community Involvement Plan are to:

- Establish trust and credibility among all participants in the program.

- Establish an open process that is responsive to the concerns of the citizens and provides for timely involvement that influences the decision-making process.

- Develop a process that creates an understanding of the issues and provides participants the opportunity to be sufficiently prepared to react with confidence to the program deliverables.

- Assist the decision-makers in understanding the relationship of key technical issues to the community's overall concerns.

Task 1 will involve interaction among a host of City organizations, including the Rochester Hills Public Services Department, the Planning Commission, City Council and the project's Technical Committee.

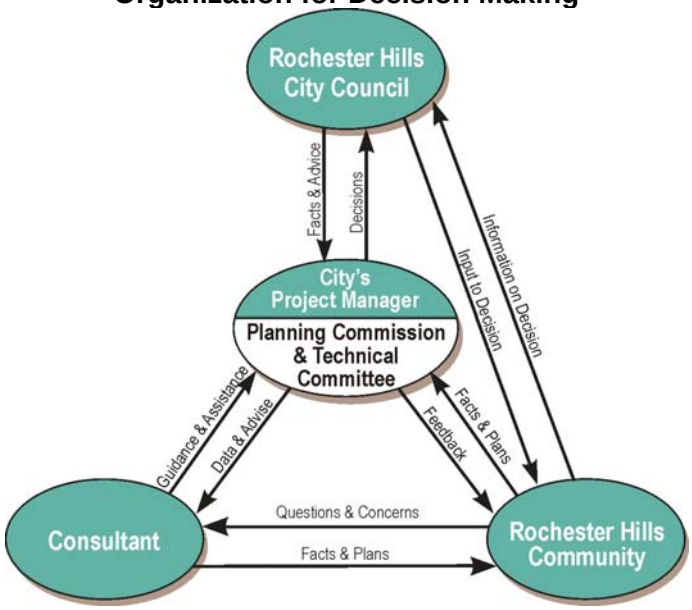
The outreach program will contact those who are traditionally under-represented in the planning process including the elderly, those with disabilities, minorities and low-income populations. This will include one-on-one contacts with the leaders and media that reach each of these special groups.

The project's information will be provided to the public through a series of six public meetings. These will be held at different locations and times of the day to cover all parts of the City. A Web site will contain key project information and be regularly updated to allow the public to maintain contact with the project between public meetings.

Community Outreach Program (COP) Structure

Perhaps the single most-significant step toward successful completion of this study is the decision-making process. Figure 1 identifies several key "players": the City of Rochester Hills and its Technical Committee; the community; and, the consultant. The Planning Commission has the responsibility to make the decisions on the transportation alternative to be recommended for implementation. So, once the technical materials have been fully aired and the technical/political interactions have occurred, the Planning Commission will take a position on the alternative to be implemented. The consultant will support the entire communication/analysis process, and take the lead on the public engagement activities.

Figure 1
Organization for Decision Making



Key Constituencies

Three key constituencies of the community involvement process have been identified. Each group's attitudes may influence the attitudes of the others; in some cases, individuals may be a part of more than one group.

- Constituency 1—The general public with focused attention on special constituencies who are often absent from the planning process, including seniors and the disabled.

- Constituency 2—Community "thought leaders," business leaders, and related interest groups such as historical and environmental organizations or neighborhood associations.

- Constituency 3—Government officials such as City Council members, officials of surrounding communities, and other elected or appointed officials.

Direct mailings will be the first element of communication to reach each group. Further, the members of the consultant team will visit agency and "thought leaders" with an interest in the project. This is particularly important to reach constituencies who are often not heard in the debate over government's actions. Open access to project information will be maintained through a project Web site.

As noted above, six public meetings will be held throughout the project. The public meetings will take varied forms including workshops, formal presentations, and the like. Each meeting will be preceded by a Technical Committee meeting to review the information to be presented to the public.

Media Relations

The consultant will assist the City in its contact with the media, as the City deems appropriate. The consultant will develop materials to background reporters and editors to explain the purpose and products of the study and to answer any questions. If also deemed appropriate, the consultant will assist in presentations to trade, civic, social and religious organizations.

Proposed Public Meetings

The consultant will advertise and conduct six public meetings in the planning process. Two of these public meeting events (in Months 4 and 6 of the project) will be conducted on four consecutive days/nights in each quadrant of the City of Rochester Hills. The other public meetings will each be held on one day (morning, afternoon or evening) and will be rotated among these four quadrants. Invitations to each meeting will be hosted on the City's Web site at least ten days prior to each meeting. The consultant will also provide key groups with postage-free invitations to be mailed to their constituencies. Upon request in advance of each public meeting, sign language interpretation will be available.

Each meeting will inform the public of the status of the Plan Update process. As now contemplated, a period of each meeting will be devoted to questions and answers and the public will be asked to identify and provide information about key issues that are the focus of the meeting. The latter part of each public session will facilitate one-on-one discussions

between citizens and the City/consultant team. Large laminated maps/graphics will be used to assist the public in identifying their needs.

The following is the tentative schedule and content of the six public meetings.

Meeting 1: Introduce Project – Month 2 of the Project

The City/consultant team will introduce the project's work program/schedule and present an overview of transportation issues (like Level of Service and use of non-motorized transportation). Project objectives will be reviewed and a preliminary list of evaluation factors will be discussed. At this meeting, 100 disposable cameras will be provided to attendees so they can develop visual images of issues that make them proud of and concerned about the transportation system in Rochester Hills. These photos will be placed on the project Web site and be input to the second public meeting.

Meeting 2: Define Key Issues/Vision – Month 4 of the Project

This meeting will involve a set of four submeetings, one in each quadrant of the City. Each meeting in a subarea will begin with a brief presentation of the history of the long-range planning process and the list of project objectives. Following that presentation, participants, working in small groups to which they are randomly assigned (usually no larger than eight people), will articulate those items that make them proud of their City as well as concern them. The issues articulated will be summarized for the entire meeting before moving to a discussion of a "transportation vision." Facilitators for each working group will be drawn from the consultant and the City's staff.

During the visioning portion of the meeting, participants will be asked to describe what they see in their "mind's eye" for the area's transportation system in 2025. Each person will be asked to describe what pleases them and what makes them feel good. Then, by using a simple scoring process, the group will sift through all vision issues to frame out a concise vision statement. This will then be used to initiate the development of transportation alternatives and the process by which they are evaluated. The latter will be the subject of Meeting No. 3.

Meeting 3: Review Existing Conditions/Explain Evaluation Process – Month 6 of the Project

This will also be a set of four meetings – one in each quadrant of the City. The results of the analysis of the performance of the transportation system (roads, non-motorized, and public transportation) will be presented at the beginning of each meeting. Then, the public will help define the alternative transportation system scenarios. Large wall maps will allow "Post It" notes to locate/define their needs. Graphics/drawings will be used to illustrate alternative transportation modes to stimulate conversations about options.

During this meeting, evaluation factors, like those shown on Table 1, presented here as examples, will be offered to the public as a basis upon which to evaluate proposals for the 2025 thoroughfare plan. A brief explanation of each example evaluation factor is presented next.

Table 1
Sample Evaluation Factors and Performance Measures

Evaluation Factor	Performance Measure
Minimize Neighborhood Disruption	Projected traffic volumes/speeds on 20 sensitive (environment, aesthetics, social) roadway segments (selected in cooperation with City).
Better Connect Links in the Transit and Road Networks	Change in travel time from baseline system for up to 30 origin-destination pairs (selected in cooperation with City).
Maintain Good Air Quality	CO concentrations at 20 points in the network (selected in cooperation with City) and consistent with noise, community cohesion, and safety factors analysis.
Minimize Purchase of Private Property to Build Transportation Facilities	Number of residential and business properties potentially taken.
Protect Open Spaces/Parks	Number of acres of public and non-public park potentially lost.
Control Noise at Sensitive Locations. (e.g., homes, schools, hospitals, etc.)	Expected "significant change" in noise due to traffic volume change at 20 points (selected in cooperation with City).
Maximize Safe Travel	Change in crashes compared to baseline system in vehicle miles of travel on 20 roadway segments (selected in cooperation with City).

Source: The Corradino Group, Inc.

- Minimize Neighborhood Displacements – The transportation network of the future would have traffic volumes on roadway links that are likely to be different from those of today. To measure the effects of various transportation system alternatives on/near neighborhood areas, the forecast volumes and speeds on 20 roadway segments should be computed.

- Connect Links in Road Networks – To measure the degree to which different connections affect overall travel, the movements between 30 pairs of connected zones (origins to destinations) should be examined.

- Maintain Good Air Quality – To assess the relative performance of alternative transportation elements tested to develop the Year 2025 Thoroughfare Plan, concentrations should be calculated of carbon monoxide (a gas that can cause health impacts) at 20 locations along the roadway system where people congregate.

- Minimize Purchase of Private Property to Build Transportation Facilities – Concepts for modifying the elements of the transportation system to develop the Year 2025 Thoroughfare Plan could involve property acquisition. The extent to which this could occur should be measured.

- Control Noise at Sensitive Locations – Homes, schools, and hospitals are among land uses considered sensitive to noise. The expected change in noise at 20 sensitive locations should be measured.

- Protect Open Space/Parks – This issue is very much like that of private property acquisition. The acres of potential parkland/open space possibly needed to develop various transportation elements tested for inclusion in the thoroughfare plan should be measured.

- Maximize Safe Travel – Each alternative transportation system will be related to the resultant vehicle miles of roadway travel. Vehicle miles of roadway travel can be related to crashes. Calculating the fatal and property damage incidents expected with each alternative will define this evaluation factor.

Meeting 4: Present Evaluation Results/Transportation Needs – End of Month 8 of the Project

Preliminary evaluation results of alternatives to establish the Transportation Needs Plan will be presented to the public. This will reflect a "wish list" of projects if "money were no object."

Meeting No. 5: Present Draft "Affordable" Plan – Month 11 of the Project

Upon review by the Technical Committee, City Planning Commission and City Council of the Year 2025 Needs Plan, the "Affordable" Plan will be presented to the public. This will be derived by combining projects in the Needs Plan with available financial resources and prioritizing these needs.

Meeting No. 6: Present Final Report – End of Month 12 of the Project

A final report will be presented at the end of the 12th month of the project. An attractive "Summary Poster" will also be prepared. A public meeting will be held to present the final recommendation.

Product

Technical Report 1 will provide details of the Community Involvement Plan. This report will be subject to review and approval by the Technical Committee, City Planning Commission and City Council. As the public involvement then unfolds, all meeting minutes, e-mails, comments from the public, and related information will be compiled in the "Public Involvement Diary" and placed on the project's Web site.

Task 2: Mapping/Data Development/Financial Resources

Purpose

The purpose of this task is to adequately compile and display the data that will support development of the 2025 Master Thoroughfare Plan. The work will allow for the development of future-year socioeconomic data files and highway, pathway and transit networks. In addition, a financial resources plan will be prepared to identify costs and funding opportunities for the plan.

Approach

As a key part of this task, the 13 traffic analysis zones (TAZs) for Rochester Hills in SEMCOG's model will be divided into about three dozen zones. Likewise, the SEMCOG network will be augmented to include a number of local roads (Dutton, west of Orion; Meade, east of Rochester; Tienken, west of Adams; and, Letica) not now in the network. These refinements will strengthen the basis of defining the performance of the existing transportation system and the analysis of alternatives.

To perform this task, the client will make its best efforts to provide the following, where available:

- Access to and products of the Pictometry software system as needed to conduct the study and produce the needed products;
- GIS information on:
  - Major employers
  - Parks, nature preserves, and other major recreational amenities (potential Section 4(f)/6(f) resources)
  - Major business centers
  - Higher educational and medical institutions
  - Major rail lines and utilities
  - Water resources (lakes, rivers and streams)
  - Wetland
  - Existing and planned residential developments or neighborhoods (not specific structures)
  - Known concentrations of elderly, low-income, or minority populations (as related to Environmental Justice)
  - Recorded historic sites (as identified by the Natural Resources Conservation Service, formerly Soil Conservation Service)
  - Recorded sites of environmental contamination
- Traffic counts – ADT, turning movements, and vehicle classification
- Crash data by segment and intersection
- Speed studies
- Traffic signal timing
- Inventory of traffic signs, signals, and pavement markings for major intersections and selected travel links
- Pavement conditions
- Parking supply and demand for parking, and regulations governing parking on major roadways and at selected activity centers
- Pedestrian movement patterns at selected activity centers
- Public finance historic data for revenues and expenditures
- Forecasts of public sector revenue
- Local taxing structures
- Master Land Use Plan
- Master Pathway Plan

Corradino will then work with the City to develop input needed to support the analysis process including:

- Zonal data on population, employment, and household data such as workers per household and vehicle availability
- Traffic Counts
- Special Generator Descriptors
- External-to-external travel information
- Transit Service Information

The consultant will work with the City to identify land uses that should be defined as “special generators.” While it is generally considered good practice to minimize the use of special

generators, there are certain land uses where the generation of trips is not explained by the zonal data. Examples are large facilities such as Rochester College on Avon. Special generators will be used in the travel forecasting model, if it is found that they are needed.

Preliminary Financial Resources Plan

Corradino will initiate work early in the study process to develop a Preliminary Financial Resources Plan. The work will begin by examining the City's financial resources to support the existing Thoroughfare Plan and SEMCOG's work on the region's long-range transportation program. Funding sources and amounts in those plans will be updated and new sources will be considered and added, as appropriate. The impact of the federal SAFETEA-LU legislation will be included here, particularly because Michigan is to receive a slightly increased return of the federal gasoline taxes it contributes to the Highway Trust Fund. Likewise, ideas developing through the just-started federal effort to change the way transportation is funded will be included in this analysis.

During the development/evaluation of alternative transportation plans, the consultant will refine the funding sources to establish a Financial Resources Plan that will identify: 1) projects by the years over which they will be implemented using current revenue sources; and, 2) projects that will be associated with proposed new revenue sources, if any.

Product

This task will be documented in a two-part Technical Report 2. The Financial Resources Plan will also be documented in this technical report and updated as the project unfolds. Its contents will be reviewed with the public in the project's 4th and 11th months.

Task 3: Analysis of the Transportation System

Purpose

The objective of Task 3 is to define the deficiencies of the existing-plus-committed (E+C) transportation system under present day (i.e., base year) and 2025 travel conditions.

Approach

The consultant will use base year and 2025 socioeconomic data and SEMCOG's TransCAD model to generate travel on the existing-plus-committed highway system. This analysis will focus on highway levels of service. This broad analysis of deficiencies will be augmented by micro-simulations in up to five key corridors using SYNCHRO/CORSIM and/or VISSIM.

This analysis will be accompanied by use of the "PC-Travel" software/hardware to analyze travel time and delay data for existing conditions. This Windows-based application will process data that are collected with a GPS receiver mounted on a car moving in each travel direction during peak periods. The data collected can pinpoint where and why delays are being encountered, particularly as they relate to movements associated with individual driveways to adjoining properties. Then SYNCHRO/CORSIM/VISSIM and PC-Travel will be used to specifically define where:

- Additional traffic carrying capacity of the roadway is needed

- Cross-access between/among adjoining properties needs to be provided to reduce congestion and traffic crashes
- Improvements to ingress and egress to properties along a corridor need to be made

Product

Technical Report 3 will document the "pressure points" under base year and 2025 travel conditions on the existing-plus-committed transportation system components – highway, non-motorized and transit. The results will be presented to the public in the sixth month of the project at which time the definition of proposed future transportation improvements which will begin.

Task 4: Alternatives Analysis and Development of "Needs" and "Affordable" Plans

Purpose

This task will develop a Needs Plan which will define the transportation deficiencies that "need" to be addressed in the 2025 Thoroughfare Plan, if funding were not an issue. The Needs Plan will be multimodal and will address the roadway, non-motorized (walking, bicycling), and transit modes, and the activities at special generators. Also included will be the use of ITS. Prioritization of elements in the Needs Plan will then lead to the 2025 "Affordable" Plan, i.e., the official Master Thoroughfare Plan.

Approach

The Needs Plan will be developed by analyzing at least three different alternatives for 2025 using the types of performance measures shown earlier on Table 1 and comparing their performance to the E+C Network. These comparisons will first identify roadway facilities with volume/capacity (v/c) deficiencies sufficient to warrant investment through 2025. Careful examination of the expected highway needs will be conducted to make sure, where appropriate, certain facilities are dropped because they are not able to be improved for reasons such as: severe community impact; expense of development due to geography or existing development; policy constraints (the road is as wide as permitted); and/or, environmental issues. The Needs Plan, developed from the best elements of the three alternatives, will likely cover many projects of different modes. It will be documented in Technical Report 4 and presented to the public at the end of the eighth month of the project.

The following subtasks make up Task 4.

Subtask A – Identify Strategies

In developing the alternative plans to be tested, a number of strategies will be examined:

Transportation Demand Management (TDM)

There will be a comprehensive analysis of approaches to managing transportation demand as Rochester Hills continues to develop. In its broadest sense, demand management is aimed at reducing the impact of traffic by influencing people's behavior. Evidence indicates that well-focused demand management programs can reduce peak period traffic by up to 15 percent. But, demand reduction efforts must be undertaken on a truly broad and

comprehensive scale to appreciably reduce traffic on major arterials. So, realistic expectations of demand management must be set. The components to be studied include:

- Parking management;
- Goods movement management;
- Access management;
- Ridesharing;
- Alternative work hours; and,
- Telecommuting.

Parking Management - A parking management program controls supply, price, and enforcement of parking. Parking management is aimed at improving environmental quality, encouraging shifts to non-auto modes, and/or preserving access to key generators, including neighborhoods. Both on-street and off-street parking are part of a truly comprehensive parking management program.

Goods Movement Management - The management of urban traffic must look at all of the elements of congestion and establish an integrated set of actions. One is to better manage the time and location of truck deliveries and pick-ups to minimize unnecessary congestion. Elements to be examined in establishing a goods movement strategy are:

- Traffic management;
- Improvements at shipping/receiving points;
- Reducing operational and physical constraints; and,
- Changing business operating practices.

Access Management - The important reasons for using access management are to improve capacity and safety, and to extend the useful life of an existing roadway at little cost. The primary goal of access management is to limit and separate traffic conflict points. This is done through management and regulation of driveways, medians, median openings, traffic signals and freeway interchanges. Some keys to access management include:

- Restricting the number of driveways per lot;
- Locating driveways away from intersections;
- Connecting parking lots and consolidating driveways;
- Providing residential access through neighborhood streets;
- Increasing minimum lot frontage on major streets;
- Promoting a connected street system;
- Encouraging internal access to out parcels;
- Regulating the location, spacing, and design of driveways;
- Including access management provisions in local comprehensive plans.

Negotiated Agreements - Negotiated traffic mitigation agreements have become a common practice in approving site design plans for newly-zoned developments. The recently-approved agreement to improve the Tienken Road/Rochester Road intersection reflects that trend. Often, the agreements specify the number of vehicle trips to be ultimately eliminated from a given development, but leave wide latitude to the developers in deciding how those reductions are to be achieved. Some jurisdictions have adopted more prescriptive approach that not only set performance requirements, but also list a number of specific actions the developers must adopt to carry out the intent of the agreement.

Ridesharing - Ridesharing can involve “carpooling,” vanpooling,” and “buspooling.” Ridesharing usually constitutes a key element of a demand management program.

Alternative Work Hours - Spreading the demand for travel over a wider band of time through “alternative work hours” programs is another demand management technique. By spreading demand, an existing bus fleet and road network can serve more commuters without additional investment in peak capacity. There are three predominant methods of spreading commuter travel demand: *Staggered Hours, Flex-time, and Compressed Work Week*.

Telecommuting - The number of telecommuters nationally totals over eight million people. Research has shown that in California, 6.1 percent of the workforce telecommutes on average of 1.2 days per week. Telecommuting has led to a decrease in peak-hour travel but has also been linked to increased travel in non-peak periods.

Non-Motorized Facilities

A two-pronged approach will be used to determine bicycle and pedestrian facilities needs and improvements. A Level of Service Model will address the quality of the existing facilities (as well as be used to model alternatives). A method will also be used to assess the probable demand for non-motorized facilities throughout the project area.

The Level of Service evaluation will be based on research by Sprinkle Engineering that tested a wide variety of bicyclists and pedestrians over a range of corridor types and correlated their feedback into a rating system. The level of service determination is based on numerous aspects of road cross-section and use characteristics.

The demand analysis will determine the likely number of bicycle and pedestrian trips that may be expected given an ideal network of facilities. The model will identify geographic centers of activity for walking and bicycling. By using a grid analysis approach, ideal routes will be identified that are not currently part of the non-motorized system.

Existing off-road pathways will also be evaluated to see if they can be improved. Issues such as the number and nature of road and driveway intersections will be reviewed. For residential areas, the connectivity of the road network and completeness of the sidewalk system will be reviewed.

Non-Motorized Access - Providing preferential, often restricted, access to specified areas for bicycles and pedestrians offers an incentive for travelers to choose those modes. It also provides a safer, greener, less noisy environment. While this method of managing traffic is often limited to parks and recreation attractions, there are other options that can enhance the traveling experience and offer significant quality-of-life benefits to the entire community.

Auto Restricted Zones - An auto restricted zone (ARZ), in its broadest sense, refers to an area where vehicular travel is regulated, controlled or restricted in some manner. ARZs can be implemented for many reasons, but experience has shown that the three most stated objectives are: (1) to preserve and enhance the vitality of urban centers; (2) to improve the environmental quality in urban centers; and, (3) to encourage the utilization of non-auto modes. A variety of techniques can be used to accomplish this, including physical barriers to auto access, parking controls, exclusive use lanes, and turn prohibitions.

Transit Options

Transit service works best when tailored to the types of land use and the density of population, employment and commercial development in the areas served. Density of development affects the extent to which transit is used. Higher densities, in the range of 4,500 people/employees per square mile, lead to increased ridership.

When development patterns are more dispersed, transit service can be provided in two basic ways. The first way is to provide local service between particular nodes of development and the surrounding residential areas. This collector-type of service is typically supplemented by direct, express-type service that connects the nodes together. The second way is to provide a grid of transit services that cross in a perpendicular fashion on the street network. This allows patrons to travel theoretically from one point to any other point in the area with no more than one transfer.

Highway-Related Infrastructure

There are significant opportunities for increasing capacity and making better use of existing arterials without major new construction. Techniques include:

- Traffic signal improvements, including ITS;
- Arterial surveillance and management;
- Intersection improvements;
- Turn prohibitions;
- One-way streets;
- Reversible lanes; and,
- Improved traffic control devices.

An important consideration in coordinating signal systems is use of the ITS technique known as SCATS—Sydney Coordinated Adaptive Traffic System, and its supporting Autoscope video-imaging. It is in extensive use in Oakland County. Other ITS possibilities include: expanding and improving the network of communications among ITS components; expansion of changeable message signs to arterials; and, in-vehicle telemetrics and wireless communications that could, for example, offer detour routes.

Arterial Surveillance and Management - Although there are some limitations on what can be achieved, because typical arterials include so many at-grade intersections, the following kinds of actions can be taken:

- Incident detection and follow-up action to remove incidents;

- Intersection surveillance and monitoring, using fixed video cameras; and,

- Parking control and management on key arterials, with greater enforcement of parking regulations on designated through arterials.

Turn Prohibitions - Conflicts between turning vehicles and pedestrians and between turning vehicles and other vehicles approaching from the opposite direction can cause congestion delay and safety problems at intersections and driveway access points. Prohibiting turns is a means of eliminating such conflicts and reducing congestion and accidents.

One-Way Streets - High volumes of traffic and vehicle conflicts often lead to consideration of one-way traffic regulations. In the development of new activity modes such as shopping centers, sports arenas, and industrial parks, one-way regulations are frequently incorporated into original street and traffic plans.

Reversible Traffic Lanes - Arterial routes that are normally operated as two-way streets can experience much grater peak-hour traffic volumes in one direction than in the other. With the reversible lane system, one or more lanes are designated for movement one-way during part of the day and in the opposite direction during another part of the day. On a three-lane road, for example, the center lane might normally operate as a two-way left-turn lane, but during the peak hour operate in the direction of greater flow. Two increasingly used methods are to reverse the flow of an entire street during peak-hour periods or to make a two-way street operate one-way during that period.

Subtask B—Evaluate Alternatives

The menu of strategies identified above will be used to prepare three uniquely different alternatives for comparison with the existing-plus-committed (E+C) transportation system. Once the alternatives are formed and approved through consultation with the Technical Committee, Planning Commission, City Council and the public, the SEMCOG travel demand model will be run.

While SEMCOG model output will be sufficient for most analyses, it will be augmented to determine, with more precision, the micro effects of changes on selected roadway links/intersections.

For analysis of micro issues associated with roadways, SYNCHRO and/or VISSIM will be used. Each program reflects recommended procedures of the *Highway Capacity Manual*. Each is also user friendly in its data entry features and provides significant flexibility in analyzing future scenarios.

Non-motorized trips are relatively short. So, the typical traffic analysis zone data and networks are too coarse to be effective analysis tools. Therefore, a layered grid will be prepared to account for available facilities, land uses and "point" generators which is sensitive to areas that sometimes lie wholly within a Travel Analysis Zone. Two measures of effectiveness will be established for non-motorized options: the BCI (Bicycle Compatibility Index) established by FHWA; and, Corradino's RCI (Roadway Condition Index)[1].

An additional technique to be used in the evaluation process is EMIS which is easily integrated with SEMCOG's model. It uses the U.S. EPA's Mobile computer program and a custom-written program to estimate daily mobile source emissions associated with transportation alternatives. EMIS reports emissions by area type and facility type accumulated by geographic location.

Subtask C – Establish "Needs" and "Affordable" Plans

As noted, all the projects in the Needs Plan will not be affordable. So, the consultant will use evaluation criteria and performance measures, like those discussed earlier, as a basis for ranking projects in the Needs Plan for inclusion in the "Affordable" Plan. The preferred

[1] RCI is a function of traffic, number of lanes, allowable travel speed (in kilometers), the percentage of heavy vehicles, the width of the right lane, surface conditions, and a location factor based on the level of pull-in/pull-out traffic.

alternative that emerges will be "programmed" for implementation. The implementation strategy will define the costs and funding sources to accomplish each plan component. Timing of the implementation scenario and responsible organization will be established in a "responsibilities" matrix. Measures of effectiveness and the methods by which they will be established will be developed so implementation progress can be determined. Measures of effectiveness will include:

- Volumes on key roadways;
- Level of service on key roadways;
- Volume/capacity at key cutlines;
- Daily delay;
- Auto occupancy;
- Percent of trips by auto and non-auto modes;
- Percent of trips during peak hour and peak periods;
- Accident rate; and,
- Environmental issues,
  - Noise in surrounding land uses
  - Air quality.

Product

The work in this task will be documented in Technical Reports 4: Needs Plan and 5: Official Master Thoroughfare Plan. The results will be presented to the City's Technical Committee, Planning Commission and City Council and, then, to the public so that the 2025 Thoroughfare Plan can be discussed and advanced to adoption.

Deliverable Products

Five Technical Reports will be produced throughout the course of this work. They will be combined into the project's final report: The Rochester Hills 2025 Thoroughfare Plan Update and a "Summary Poster." The following procedures will be adhered to by the consultant in producing all documentation.

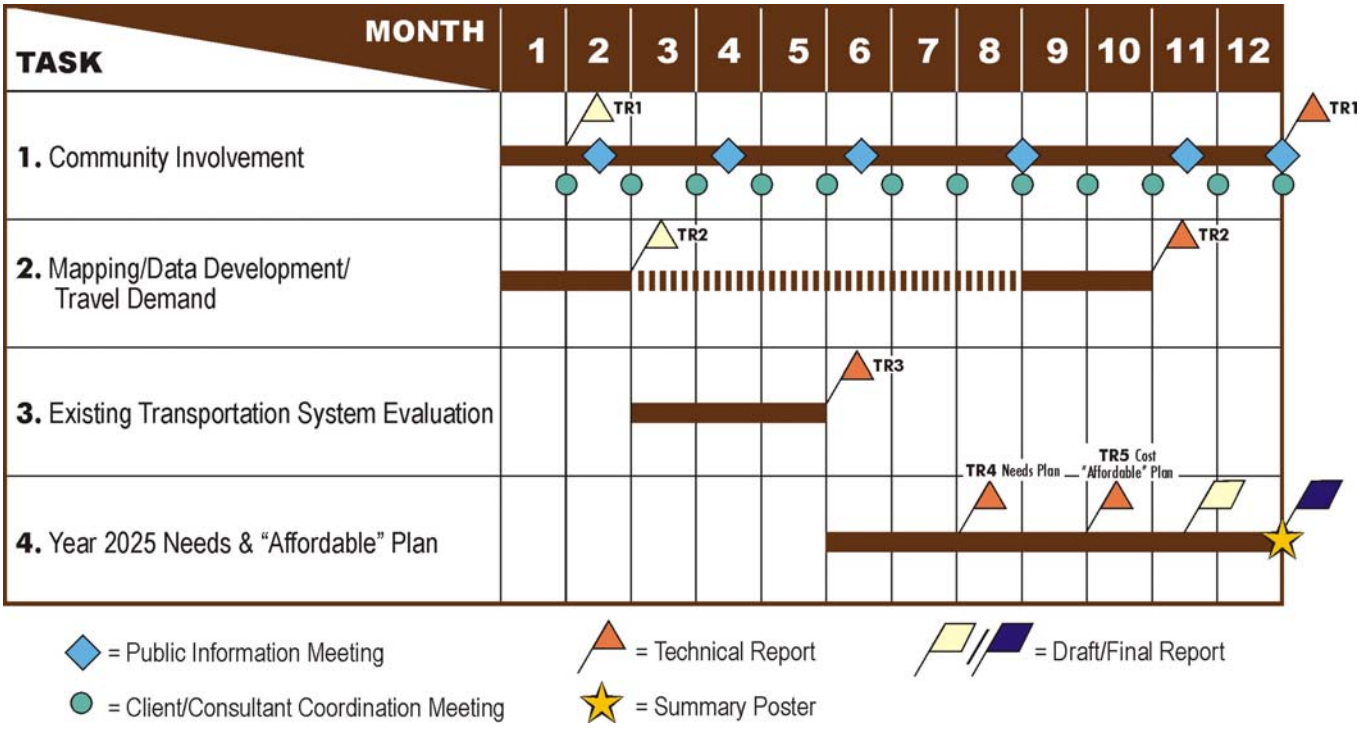
- Twenty copies will be prepared of all draft documents
- Fifty copies will be prepared of the final documents
- One electronic version will be provided of all deliverables, including documents, spreadsheets, databases, Web site and presentations in Microsoft PowerPoint, Word, Excel and Access
- Two CDs will be provided containing the final versions of the project documents, spreadsheets, databases, Web site, presentations, reports, schedules, and surveys prepared as part of the project.
- An Adobe Acrobat PDF version will be provided of the complete, final document
- Project status reports will be prepared monthly
- Agendas and notes will be prepared of all meetings
- Project schedules will be updated, as necessary

3. Schedule

The consultant proposes to complete the Master Thoroughfare Plan Update within 12 months of the notice to proceed (Figure 2). The Community Involvement activity (Task 1) will be continuous throughout the entire project. Task 2 – Mapping/Data Development/Financial Resources will start with the notice to proceed and be completed, in part, by the end of the second month. Additional work in the financial resources area will be undertaken in Months 9 and 10. Task 3 – Transportation System Evaluation will cover Months 3 through 5. Plan Development (Task 4) will be active from the 6th to the 11th months of the assignment. The project's final documentation will be completed between Months 10 and 12.

Again, the overall assignment, including six public meetings will be conducted over 12 months.

Figure 2
Project Schedule
Rochester Hills Master Thoroughfare Plan Update



Project Objectives

In executing the four-task work plan, each of the project's objectives will be addressed. This will not only allow the State Law requirements to be met but active engagement of the City's departments, its Technical Committee, the City Council, City Planning Commission and the citizens of Rochester Hills. This will build credibility for the planning process and sustainability for the resultant plan.

Work Plan Coordination to Meet Project Objectives

Work Plan / Project Objective	Task 1 Community Involvement	Task 2 Mapping/Data Development/ Financial Resources	Task 3 Existing Transportation System Evaluation	Task 4 Year 2025 Needs & "Affordable" Plan
1. Meet/Exceed State Law	■	■	■	■
2. Identify Deficiencies			■	
3. Identify Needs		■	■	■
4. Identify Need for Road Reclassification			■	■
5. Develop Alternative Plans			■	■
6. Evaluate Plan Upgrades			■	■
7. Evaluate/Update R-O-W Plans				■
8. Incorporate Context Sensitive Design				■
9. Prioritize Improvements				■
10. Select Corridors for Access Management				■
11. Provide Safety Recommendations				■
12. Evaluate Pathway/Roadway Connectivity			■	■
13. Identify Needs for Pedestrian Crossing Upgrade			■	■
14. Provide Deliverables on Web in GIS	■	■	■	■
15. Work with Technical Committee	■	■	■	■
16. Work with City Council/City Planning Commission	■	■	■	■
17. Conduct Public Forums	■	■	■	■

4. Project Management, Staffing and Cost Proposal

Jim Hartman will be the consultant's Project Manager of this study. He will conduct weekly meetings with the client's project manager to ensure that the study stays on track. Monthly face-to-face meetings with the Technical Committee are also to be conducted. Jim will submit monthly progress reports with each invoice that will identify work accomplished during the past month, products produced, and any problems encountered.

Joe Corradino, who will serve as Principal-in-Charge on a pro-bono basis. He will attend every Technical Committee meeting and all public meetings. He will review every report prepared by Jim Hartman before submission to the client. All major tasks will be documented in draft Technical Reports so that the client has the opportunity to review materials throughout the project and before information is finalized and presented to the public.

The following paragraphs summarize the experience of key staff and identify their roles on and hourly commitments to the project (Figure 3). Full resumes are in Attachment A.

James Hartman, PE (Corradino)

Jim Hartman is Technical Vice President of The Corradino Group specializing in traffic engineering and transportation planning. He is the proposed Project Manager on this assignment and has served in this capacity on several Access Management and Traffic Studies. His background includes serving as a lead transportation engineer on major transportation assignments, which include deficiency analyses, alternatives analysis, and preliminary design. He is proficient with traffic simulation models such as SYNCHRO, CORSIM, and VISSIM and with GIS and CADD. He has also worked on the school walking plans for Rochester Hills in the mid-1990s. He has lived on South Boulevard between Crooks and Livernois for nine years.

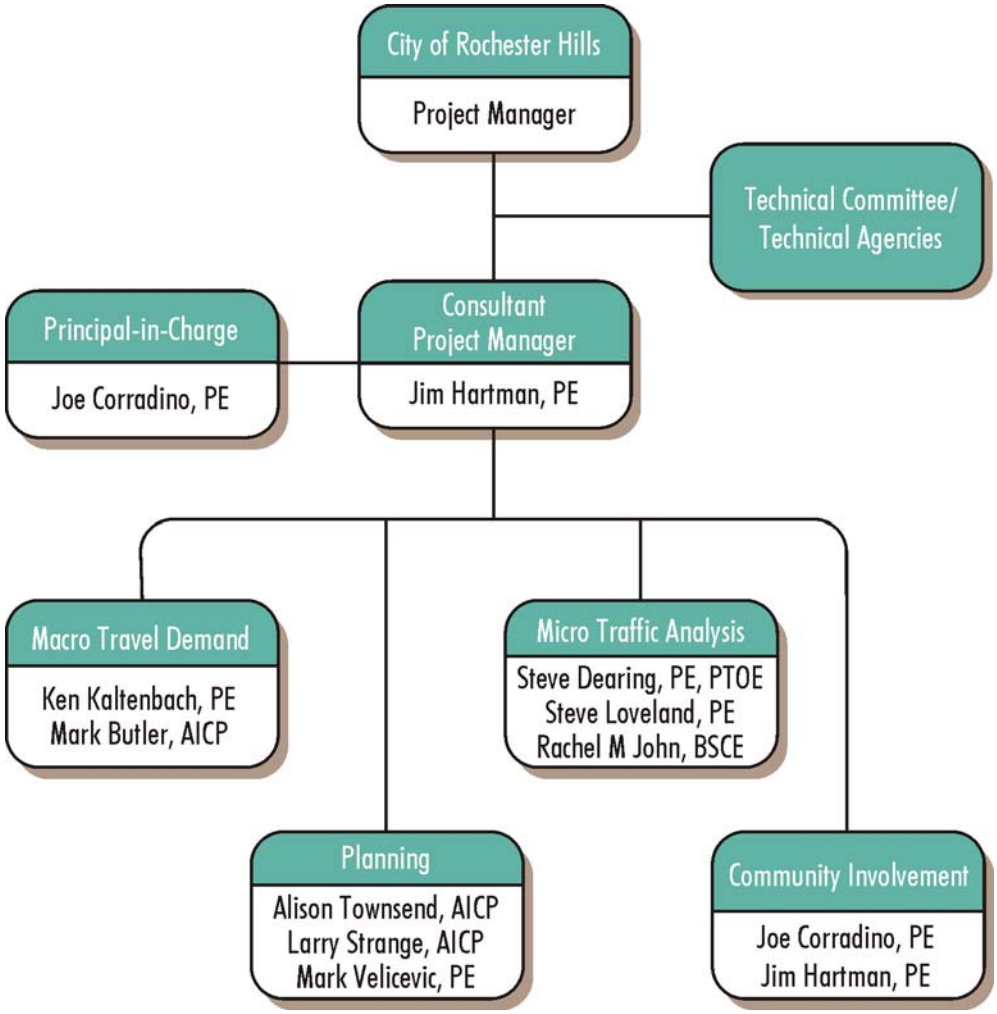
Joseph C. Corradino, PE (Corradino)

Joe Corradino will serve as the Principal-in-Charge of this project on a pro bono basis. He will assist Jim Hartman on all public meetings, and in preparation of all deliverables. His emphasis is on-time/on-budget performance. He has served as Project Manager or Principal-in-Charge of numerous projects in the 40 years he has been in the consulting business. This includes recent work in Ann Arbor and for MDOT on I-75.

Kenneth D. Kaltenbach, PE (Corradino)

Ken Kaltenbach is the Vice President in charge of Corradino's Transportation Planning Division. He is widely recognized as one of the nation's most accomplished travel modelers. His 35 years experience includes many travel surveys, corridor studies, and transit and traffic studies. He has developed models for all modes of travel, including those that address freight, pedestrian and transit activities. He serves as the manager of the Lansing model development project and is co-principal modeler on the Detroit River International Crossing Study. He is expert in the use of TransCAD, SEMCOG's model platform.

Figure 3
Organization Chart
Rochester Hills Master Thoroughfare Plan Update



Mark Butler, AICP (Corradino)

Mark Butler is a community and transportation planner. He is experienced in land use planning and zoning and has practical understanding of the connections between mobility, urban design, and economic development. Mr. Butler has worked with a variety of GIS and database programs to develop plans, models, and studies, including the development of a Commodity Freight Flow Model, a regional economic impact analysis model and an international travel demand model. Prior to joining The Corradino Group, he specialized in comprehensive planning.

Stephen B. Dearing, PE, PTOE (OHM)

Steve Dearing will be principally responsible for transportation planning and traffic engineering services. His 30 years of experience include traffic impact studies and

professional surveys leading to recommendations on roadway safety, geometry, capacity, traffic operations, and traffic control.

He recently completed authoring an Access Management Ordinance that has been adopted by the Charter Township of Orion, Michigan. As a former City Traffic Engineer for a total of 13 years, he managed the activities of transportation planning, traffic engineering and operations for two mid-sized communities (populations 70,000 and 90,000).

Steven M. Loveland, PE (OHM)

Steve Loveland is a traffic project engineer for Orchard, Hiltz & McCliment, Inc. His background includes serving as lead traffic engineer on assignments such as signal optimization in Oakland County, Northwestern Connector Modeling of Three-lane Roundabout in Oakland County and various access management, environmental assessment and design/location studies.

Rachel M. John, BSCE (OHM)

Rachel John has experience in providing traffic engineering services for roadway construction projects including maintenance of traffic and traffic impact studies including capacity analyses, safety analyses and traffic simulation. She is currently responsible for preparing traffic engineering plans and conducting traffic operations and safety investigations using MDOT standards such as the MMUTCD and Standard Highway Signs Manual as well as standards from AASHTO and other state and local agencies.

Lawrence J. Strange, AICP (Corradino)

Larry Strange, a Technical Vice President with Corradino, is experienced in all modes of transportation emphasizing the non-motorized and transit modes. He has led transit development programs, demand-response and paratransit coordination studies, transportation center site selection and feasibility studies, and public involvement programs. Larry Strange led Corradino's work for the Beaver Island Transportation Authority Study and has worked on projects in Detroit, Cadillac, Traverse City, Grand Haven and other Michigan communities.

Alison Townsend, AICP (Corradino)

Alison Townsend is a senior planner in Corradino's transportation division. She has been involved in transportation studies in Trumbull County, Ohio; Allen County, Ohio; and, Traverse City, Mich. She is currently participating in the Detroit Intermodal Freight Terminal EIS, and the Detroit River International Crossing Study. In addition to transportation planning, Ms. Townsend has prepared land use and development plans, including comprehensive plans in Portage and Kalamazoo, Mich. She has expertise in GIS, demographic analysis, surveys, Title VI/Environmental Justice issues analyses, and related research.

Mark Velicevic, PE (Corradino)

Mark Velicevic's background includes a wide range of transportation projects from traffic studies to road design projects. Mr. Velicevic has extensive site and roadway design

experience with a full range of facilities. He is proficient in CADD, GIS and microsimulation transportation modeling software packages.

4.1 Staffing and Cost Proposal

Corradino certifies that the project manager and each staff member has the capacity to complete the project within the proposed project schedule. The hours of service of each team member are shown on Table 2. Jim Hartman, Project Manager, will dedicate 255 hours to the project. The Corradino members of the team will provide an additional 600 hours of services. OHM will add another 340 hours. The total of almost 1,200 hours is associated with a cost for services of $116,728 or about $100/hour (Table 3). Expenses add another $2,800 for a total proposed cost of $119,528.

Table 2
Rochester Hills Master Thoroughfare Plan Update
Hours by Task

Rochester Hills MTPU HOURS BY TASK		**Task 1 Community Involvement**	**Task 2 Mapping/Data Development/ Travel Demand**	**Task 3 Transportation System Evaluation**	**Task 4 Alternatives Evaluation**	**Total**
The Corradino Group – Personnel						
Corradino	Principal-in-Charge	70	20	20	20	130
Hartman	Project Manager	30	65	70	90	255
Velicevic	Trans. Engineer	20	40	60	50	170
Townsend	Trans. Planner	10	10	40	30	90
Strange	Trans. Planner	10	10	30	30	80
Butler	Trans. Planner	10	0	20	20	50
Support		0	20	20	40	80
	Subtotal Hours	**150**	**165**	**260**	**280**	**855**
Orchard Hiltz & McCliment – Personnel						
Dearing	Prof. Engineer IV	25	30	50	50	155
Loveland	Prof. Engineer IV	10	40	40	30	120
John	Prof. Engineer I	15	20	10	20	65
	Subtotal Hours	**50**	**90**	**100**	**100**	**340**
	Total Hours	**200**	**255**	**360**	**380**	**1,195**

Table 3
Rochester Hills Master Thoroughfare Plan Update
Cost Proposal with Full Billing Rates

	Person Hours			Full Billing Rate	Burdened Labor Costs
DIRECT LABOR					
Joe Corradino	130	x	0.00	0.00	
Jim Hartman	255	x	49.81	149.43	$38,104.65
Mark Velicevic	170	x	29.40	88.20	$14,994.00
Alison Townsend	90	x	30.35	91.05	$8,194.50
Larry Strange	80	x	44.80	134.40	$10,752.00
Mark Butler	50	x	23.82	71.46	$3,573.00
Support	80	x	21.07	62.31	$5,056.80
Steve Dearing	155	x	42.31	126.93	$19,674.15
Steve Loveland	120	x	33.30	99.90	$11,988.00
Rachel John	65	x	22.52	67.56	$4,391.40
				Subtotal	$**116,728.50**
DIRECT EXPENSES					
Shipping	14.00	x	25		$350.00
Rental Car	60.00	x	4		$240.00
Motel	60.00	x	4		$240.00
Per Diem	23.75	x	4		$95.00
Printing	0.08	x	1,650		$132.00
Aerial plots for meetings	100	x	90		$900.00
Travel Mileage	0.485	x	500		$243.00
PC Travel	200.00	x	3		$600.00
				Subtotal	**$ 2,800.00**
	TOTAL NOT TO EXCEED ESTIMATED COSTS				**$119,528.00**

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