Conceptual Options: Introduction

Five “conceptual options” have been developed to foster ideas and to generate early input in the Options development process. The concepts are general and represent distinctly different approaches to address the same problem – the need to improve mobility for intersuburban and reverse commuters. The five concepts are listed below:

1. Hub and Spoke
2. Multiple Hub and Spoke
3. Grid Network
4. Point-to-Point
5. New Use of Existing System

While this is a very conceptual step in the development of solutions, it is also an important opportunity for early, thoughtful input. We are particularly interested in:

- Insights regarding which of the five concepts appeals to you: 1) the most, 2) the least, and 3) why.
- Thoughts or suggestions for combining two or more concepts.
- Ideas for specific improvements based on these concepts.
- Ideas regarding suburban hubs or the general orientation of a future transportation system that serves the Corridor’s employment centers.

A schematic illustration, a brief description, and the advantages and limitations are provided for each of the five concepts. The illustrations are mode (vehicle) and alignment (facility) neutral. Several different types and/or locations of improvements will likely be evaluated for concepts that are further developed.

The lines shown in the illustration of each concept depict the needed connectivity between concentrations of work trip origins (beginning points) and one or more major Corridor employment centers. There are six employment centers in the Corridor that attract intersuburban and reverse commuters - Oak Brook being the largest of six. All six of the Corridor’s major employment centers are depicted in the map with the following symbol ( ).

Your feedback will be considered by the RTA and the Cook DuPage Corridor Technical Committee as we begin to develop “detailed options” later this summer 2006. The detailed options will include mode and alignments recommendations and will likely include improvements for both users of public transit and automobiles.

Thank you for your input and we look forward to your continued participation.
Concept 1 - Hub and Spoke

Description
Concept 1 represents a “hub and spoke” system with the Oak Brook area serving as the center point or “hub” and to which new direct lines of service or “spokes” converge from the east and west. It serves the Oak Brook area similar to how the existing regional transportation system serves downtown Chicago. This concept relies primarily on new and enhanced transit services in the I-290 travel corridor and in a number of arterial corridors for east-west travel; and in the IL 83 corridor for north-south travel. The extensive network of bus service in Chicago and the near west suburbs is relied upon to access the spokes projecting east of Oak Brook. Enhanced bus service on key north-south routes would provide access to the spokes projecting west of Oak Brook in DuPage.

This hub and spoke concept is designed to directly serve the Oak Brook area which has the largest number of destinations of the six major employment centers in and around the corridor and has the highest destination densities – exceeding 7,000 trips per square mile. With additional spokes or lines of service and a well considered operational plan this concept could potentially serve most of the other major employment centers within the Corridor: Maywood/LUMC, Elmhurst/Addison, the Thorndale corridor, Yorktown (Lombard), and Lisle/Naperville/Warrenville.

Advantages and Limitations
The advantage of the hub and spoke system is that it provides a nearly direct connection between many origins to a major destination – in this case the Oak Brook area. The major limitation is that only one primary destination is served without requiring a transfer at the hub and potentially circuitous travel.
Concept 2 - Multiple Hub and Spoke

Description
Concept 2 presents a “multiple hub and spoke” system with the Maywood/Loyola University Medical Center (LUMC) area and Yorktown (Lombard) area serving as the center points or “hubs” and to which new direct lines of service or “spokes” converge from the east near Maywood/LUMC and west to Yorktown. Direct service is provided to each hub from the spokes. However a required transfer is presumed for travel between the hubs or to the Oak Brook area. Main line service in the I-290/I-88 corridor between Harlem Avenue in Forest Park and Highland Avenue in Lombard provides a critical link between the two hubs. This concept relies extensively on new and enhanced transit services in the I-290/I-88 travel corridor as well as a number of arterial corridors for east-west travel to the hubs. The extensive network of bus service in Chicago and the near west suburbs is relied upon to access the spokes projecting east of the Maywood/LUMC area. Enhanced bus service on key north-south routes would provide access to spokes projecting west of Yorktown in DuPage.

This multiple hub and spoke concept is designed to directly serve the Maywood/LUMC area, Oak Brook, and the Yorktown area. With additional spokes or lines of service and a well considered operational plan, this concept could potentially serve most of the other major employment centers in and around the Corridor: Thorndale corridor, Elmhurst/Addison, Schaumburg and Lisle/Naperville/Warrenville.

Advantages and Limitations
The advantage of the multiple hub and spoke system is its nearly direct connections between many origins and two major destinations – in this case the Maywood/LUMC area and the Yorktown area. The major limitation is that access to the mainline between the hubs may be limited to maintain higher speed and adding spokes between and to the hubs has a smaller return for improving mobility.
Concept 3 - Grid Network

Description
Concept 3 presents a grid network system comprised of intersecting east-west and north-south lines of service. It serves the corridor similar to how the existing grid network of arterials and bus routes functions in Chicago and the near west suburbs. The grid network concept relies on new and enhanced transit services on key arterial routes, expressways and tollways; and new local service on Metra commuter rail lines. Transit station park and ride facilities, the extensive network of existing bus service in Chicago and the near west suburbs, and bike and pedestrian travel are relied upon to access this grid network.

All major employment centers of the corridor, except for the Schaumburg area, are served by both east-west and north-south enhanced transit services on major arterials or highways. The Schaumburg employment center is served only by a north-south service. All the employment centers distribution sheds would be served by direct transit service, circulation service, and/or bicycle/pedestrian pathways.

Advantages and Limitations
The advantage of the grid network is its high degree of flexibility and connections between many origins and many major suburban employment destinations typically requiring only one transfer to change direction along the grid. A grid network system can also provide direct point-to-point transit service between some origins and major destinations which are located in the same east-west or north-south axis. The major disadvantage of this option is that its local service and maximum access can lead to long travel times relative to the distance traveled.
Concept 4 - Point-to-Point Service

Description
Concept 4 represents potential new direct point-to-point transit service between key areas of high density origins and five major employment centers in and around the corridor. No transfers are required between the origin and destination. This concept relies on arterial corridor upgrades and considerable new transit service since the existing transit network – particularly the commuter rail system does not match up well with the major employment centers. The I-290/I-88 travel corridor in combination with several east-west arterial corridors such as North Avenue, Roosevelt Road and Ogden Avenue are relied upon to serve multiple travel markets and origin-destination combinations. This option serves five of the six major employment centers in and around the corridor in a limited fashion.

Advantages and Limitations
The advantage of this point-to-point concept is its direct lines of service (no transfers required) between high density origins (residential zones) and high density destinations (employment centers). The major disadvantage to the user is the limited number of destinations that can be reached from any particular origin.
Concept 5 – New Use of the Existing System

Description
Concept 5 presents potential new uses of the existing transportation system to provide access to nearly all corridor employment centers for reverse and intersuburban commuters. Rather than new lines, this option relies primarily on operational improvements to all three Metra commuter rail lines (Milwaukee District West, Union Pacific West, and Burlington Northern Santa Fe), and new and enhanced transit services on several north-south major arterials. The Metra lines are the primary corridors for east-west travel, while Cicero Avenue, Kingery Highway (IL 83) and I-355 primarily serve the north-south travel corridors. Metra commuter rail park-and-ride would provide network access and transfer opportunities to several enhanced transit services on the north-south major arterials. All major employment centers in and around the corridor are served by this existing system concept.

Advantages and Limitations
The advantage of this concept is that all of the major capital facilities are already in place and it is unlikely to have major environmental and community impacts. The major disadvantage is that it may require tradeoffs between new users and existing users of the transit system, and a change in operational philosophy for the arterial system. The existing system is designed to primarily serve the traditional travel market and it may not be operationally feasible within the existing infrastructure to effectively serve reverse and intersuburban travel markets. The major employment centers are not proximate to commuter rail lines and this option would have to rely on considerable distribution at greater distances from rail stations.