4 PROJECT DEVELOPMENT GUIDELINES

The purpose of this section is to provide guidelines to ensure consistency during the planning, design, procurement, construction and operation of commuter rail improvements.

Detailed background information on Planning, Design, Procurement and Operations can be found in Section B of the Appendix

4.1 Planning Guidelines

System Expansion and Modal Integration

In the development of linear transportation corridors, there often exists an opportunity to construct the corridor in segments based on criteria such as funding availability, right-of-way availability, completion of environmental mitigation measures and facility need. A review of the corridors contained in the System Plan may identify opportunities to stage construction of these corridors.

While this issue was examined in the Twin Cities Metropolitan Commuter Rail Feasibility Study, further developments and concepts for the System Plan corridors have lengthened the corridors and possibly presented new opportunities for staging.

The decision regarding when and where to make system expansions will be based on four criteria:

1. Service to major travel generators - System expansions, either line extensions or station additions, will be staged to provide service to significant trip generators,
2. Cost effectiveness - It is expected that the end of each commuter rail line will be served by a system of feeder busses that expand the travelshed of that line. Typically, a line extension should be undertaken when the cost per passenger-mile of providing feeder bus service exceeds the equivalent cost of the envisioned line extension,
3. Community support - The potential of a particular commuter rail project may be enhanced by the level of financial support offered by interested and affected parties to the project. When this criteria is applied, the total cost of a project must be considered, including capital cost and lifetime operating and maintenance cost, and
4. Policy considerations - The extension of an existing commuter rail line may also be justified by policy considerations. For example, it may be determined that the economic well being of the region or state would be enhanced by providing commuter rail service to a major metropolitan area.

To increase the level of service provided to transit users and to enhance the efficiency, with which transit services are operated, commuter rail service planning will include:

- Selective elimination of parallel bus routes serving similar origins and destinations at the same time as the commuter rail service,
- The routes and schedules of other transit routes serving the central business districts should be coordinated to the extent possible with commuter rail service,
- The facilitation of convenient access between commuter rail service and the Hiawatha light rail transit line in downtown Minneapolis.
- Provision of feeder bus routes where service can be provided to areas outside of reasonable walking distance of commuter rail stations and reasonable travel time to principle destinations can be provided, and
- In communities that have established circulator transit services, include the local commuter rail stations in the service and arrange schedules to allow two-way transfers between the trains and the circulator busses.

Station Development and Site Planning

"The guidelines for station design are drawn from numerous other commuter rail systems."

Commuter rail provides opportunities to channel growth and redevelopment around stations and enhance communities. With respect to the planning and design, guidelines are presented below which describe how smart growth can be implemented in a commuter rail station area.

Elmhurst, Illinois Station including Waiting Room, Ticket Sales and Concession

A transit-oriented development at a commuter rail station would include a core area in the immediate vicinity of the station and an area surrounding the core. The total area of the transit-oriented development (TOD) can vary depending on the development potential of the site. Successful transit-oriented developments have been in the range of 60 acres (a circle with a 900-foot radius) to 125 acres (a circle with a radius of one-quarter mile).

The core area of the TOD is a relatively dense mixed-use development and constitutes from one-tenth to one-half the total TOD area. The main characteristics include:

Bombodier, single-deck cab car for Metro-North Commuter Rail

- Overall net floor area ratio of at least 0.5,
- Blocks are small, no more than about 4 acres,
- Buildings along at least 75 percent of block frontages face the street,
- Building faces are close to the street, within 10 feet of the sidewalk,
- Frontages in the core area are ground floor retail businesses, commercial businesses or personal services businesses (about 40% or more),
- Building faces along the street include a large percentage of glass, and
- Residential density is 30 dwelling units per acre or more.

In the TOD area outside the core, the mix of land uses should include:

- Residential (20 to 30 percent of the TOD area),
- Employment uses (20 to 30 percent of the TOD area), and
- Civic uses (about 10 percent of the TOD area).

To illustrate how TOD and Smart Growth could be implemented in settings representative of potential station locations in Minnesota, three sets of renderings are presented at the end of Section 4. The renderings are drawn from a study titled *Visions: Choosing a Future for Growing Communities* prepared by Dodson Associates for the Environmental Law and Policy Center, Chicago, IL.

Each set of renderings illustrates the same location. The three drawings present a vision of a development around a new commuter rail station under different circumstances:

1. Present condition
2. Conventional development scenario
3. Smart growth development scenario

Each of the growth scenarios assumes the same amount of development in terms of building area, population and employment. In comparing the two growth scenarios to the present condition and to each other, it is apparent that smart growth retains a much larger amount of open space than conventional growth. It is also clear that, while development is more compact under the smart growth scenario, it does not require high-rise apartment or office buildings to achieve the desired density.

Railroad Negotiations

The provision of commuter rail service within multiple corridors owned and operated by multiple freight carriers virtually demands that the authority to negotiate terms and conditions with the respective railroads be vested in a single, multi-jurisdictional public entity. The most logical choice at the present time is Mn/DOT.

Eight general guidelines are provided for negotiations between the project sponsor and the affected railroads:

1. Centralize negotiations,
2. Select and empower a multi-disciplinary negotiating team,
3. Define the nature of the service to be provided,
4. Determine procurement strategy,
5. Determine the railroad's risk, liability and insurance requirements,
6. Utilize capacity modeling to verify capital program requirements,
7. Determine public and private benefits and costs, and
8. Negotiate a reasonable cost-sharing formula.

4.2 Design and Procurement Guidelines

Right-of-Way

Recommendations related to public and private right-of-way and land ownership issues as they pertain primarily to joint commuter and freight railroad operation are:

1. It is desirable for the affected municipalities (as opposed to the commuter rail sponsor) to acquire the land or property on which stations and parking lots are constructed,
2. To the extent that such land or property is acquired by the commuter rail sponsor, stations and parking lots will be leased to the affected municipalities to the maximum extent possible,
3. The commuter rail sponsor will acquire land or property required for the siting of central maintenance, remote light maintenance/storage, service control and administrative facilities,
4. The commuter rail sponsor will acquire railroad rights-of-way to the maximum extent possible within its financial limitations, and
5. Such ownership should be pursued in cooperation with the Regional Railroad Authorities, and will extend to dormant rail lines that prove to be viable candidates for eventual commuter rail service to ensure that future availability is not lost.

"Ideally, land or property acquired by the sponsoring agency and leased to affected communities should be maintained by those same communities."

Ideally, land or property acquired by the sponsoring agency and leased to affected communities should be maintained by those same communities. Local communities should also be actively involved in siting and designing commuter rail facilities within their immediate jurisdiction.

Communication, Signaling and Train Control

"Communication, signaling and/or train control systems and/or equipment required for commuter rail service will be compatible with that used by the host railroad(s)"

Recommendations related to the provision of signaling, control and communication equipment and systems required for the safe, reliable and cost-effective provision of joint commuter and freight rail service(s) are:

1. Communication, signaling and/or train control systems and/or equipment required for commuter rail service will be compatible with that used by the host railroad(s),
2. Locomotives and cab cars purchased for the Twin Cities commuter rail service will be equipped in a similar manner,
3. If the commuter rail sponsor elects to have its own facilities security force, consideration should be given to providing a dedicated radio channel for such communication,
4. If a dedicated security force is provided, coordination with Metro Transit security communications should be provided,
5. All radio equipment purchased for the Twin Cities commuter rail service will comply with Federal Communications Commission regulations, and may be affected by the availability of radio frequencies in the Metro area,
6. Central Control Facilities (CCFs) provided for commuter and freight rail service should be equipped to actively and simultaneously monitor dedicated and common frequencies at all times. This facility may initially handle only message generation and announcement broadcast duties, but should be designed for eventual expansion into a facility engaged in train dispatching, and
7. Commuter rail passenger stations should be designed to accommodate the provision of interactive/real-time information displays tied-in to the Orion program.

Grade crossing warning equipment and safety are of paramount importance

A significant development since the conclusion of the Twin Cities Commuter Rail Feasibility Study has been the development and adoption of regional control centers by BNSF, UP and other major carriers. These centers have been implemented in

Texas and California, and more are planned. They enhance inter-carrier coordination, as well as facilitating a more immediate reaction to local conditions and are an outgrowth of the problems some rail carriers have experienced in the process of consolidating operations in key areas. Although not currently proposed for the Twin Cities, such a facility may be implemented in the future. If this happens, commuter rail dispatch should be part of this facility.

Locomotives and Rolling Stock

Recommendations related to the acquisition of locomotives required for the safe, reliable and cost-effective provision of joint commuter and freight rail service(s) are:

1. Purchase and utilize new locomotives as opposed to used and/or remanufactured motive power,
2. Specify commuter rail service proven locomotives as part of the development of a detailed technical specification for newly manufactured motive power,
3. Cars purchased for use on the Twin Cities commuter rail system will conform to all FRA requirements and to the PRESS standards,
4. Adoption of the opening day service or operating plan recommended by the Twin Cities Commuter Rail Feasibility Study,
5. Initial use of three car trains. Additional capacity per line should initially be achieved by running extra trains as opposed to lengthening the consists in order to avoid up-front capital investment in excess commuter service capacity, and
6. As ridership increases beyond initial levels, longer trains should be utilized to accommodate peak period loads as a means of reducing the impact of increased commuter service on freight capacity. This will have an impact on train performance, on station platform lengths and on maintenance and storage facility requirements. Initial station platform lengths should be capable of accommodating five to six cars.

"A final determination as to the most suitable product should await the outcome of a competitive procurement process."

Several choices of new commuter rail proven motive power are available on the domestic market. A final determination as to the most suitable product should await the outcome of a competitive procurement process.

Used and/or remanufactured locomotives should be acquired in the event that future production schedules do not allow for the timely availability of new equipment. Do to the reduced longevity inherent in used and/or remanufactured equipment,

specifications for the acquisition of these locomotives must be definitive as to rebuild/upgrade requirements and performance expectations. Baseline performance specifications are available from a variety of industry sources if and when the need arises.

"A fundamental change since the time of the Twin Cities Metropolitan Commuter Rail Feasibility Study has been the imposition of FRA rules and the adoption of the Passenger Rail Equipment Safety Standards (PRESS) by the passenger rail agencies."

A fundamental change since the time of the Twin Cities Metropolitan Commuter Rail Feasibility Study has been the imposition of FRA rules and the adoption of the Passenger Rail Equipment Safety Standards (PRESS) by the passenger rail agencies. These standards require further strengthening of the carbody to withstand collision impacts. They were adopted as a result of a series of accidents in the early 1990s, and focused on the particular concerns of what happens when two vehicles of dissimilar construction collide. It has been estimated that the adoption of these standards adds about 10% to the price of commuter railcars, compared to those used for the Twin Cities Metropolitan Commuter Rail Feasibility Study.

The adjustment of train lengths, number of trains per line, etc., should be done following the conduct of further market analysis and in response to specific concerns expressed by the host railroads during the course of negotiations. Factors which will influence these decisions include (1) refined ridership projections to reflect changing demographics, (2) order backlog at the relevant car builder (determining the schedule by which car deliveries can be made) and (3) the possibility of "piggybacking" on an order being placed by one of the other commuter rail properties to realize cost efficiencies of scale. An example of this latter strategy may be found in the Seattle "Sounder" project, where the cars for Seattle were ordered as an option on an existing car order for the Los Angeles Metrolink system.

There is a threshold in the number of additional commuter rail train trips per corridor that will necessitate revisions to the capital program. This varies from corridor-to-corridor.

Note that the addition of trains or changes in the performance capabilities of trains (due to lengthening consists) will require additional negotiations with the host railroads. Recall also that the Twin Cities Metropolitan Commuter Rail Feasibility Study capital program included improvements required to support the initial level of service on the outlying corridors. There is a threshold in the number of additional commuter rail train trips per corridor that will necessitate revisions to the capital program. This varies from corridor-to-corridor.

Maintenance and Storage Facilities

Summary recommendations related to the provision of commuter rail maintenance and storage facilities are:

1. Retain the capital program allocations from the Twin Cities Metropolitan Commuter Rail Feasibility Study for both the remote storage facilities and the central maintenance site,
2. The commuter rail sponsor should acquire the Canadian Pacific Shoreham Shops site,
3. Each commuter rail corridor will include a remote storage facility at its outer terminal for train storage and light maintenance,
4. Maintenance of commuter rail locomotive and rolling stock maintenance may be handled by a third-party contract until such time as growth in service warrants that another approach be taken,
5. Once the demand for commuter rail service has grown sufficiently, the commuter rail sponsor will provide its own central maintenance facility and assume maintenance responsibilities for locomotive and rolling stock maintenance, and
6. Examine areas in which bus, LRT and commuter rail projects can share maintenance functions and/or procure common equipment to benefit from economies of scale.

"The timetable for implementation of the routes and the quantity of locomotives, coaches and cab cars required for those routes may affect the decision regarding a maintenance facility."

The timetable for implementation of the routes and the quantity of locomotives, coaches and cab cars required for those routes (if different from what was recommended in the Twin Cities Metropolitan Commuter Rail Feasibility Study) may affect the decision regarding a maintenance facility.

Safety and Security

The commuter rail sponsor and its contractors must commit to providing a safe operation as well as a safe and secure environment for the passengers. This sense of safety and security must be provided in the park-and-ride lots, in and around the stations, as well as on the trains.

Provision of safe, secure parking is crucial to the operation's success.

Recommendations aimed at ensuring the provision of service in the safest manner possible as well as providing a secure environment for passengers and employees while on or around the commuter rail system are:

1. Commit to providing service in a safe and secure manner,
2. Participate in the APTA Rail Safety Audit Program,
3. Designate a state agency to implement the State Safety Oversight of Rail Fixed Guideway Systems in Minnesota. This agency must not be the same one that serves as the commuter rail sponsor,
4. Develop and implement a System Safety Program Plan for the commuter rail network,
5. Develop and implement a Security System Plan for the commuter rail network,
6. Comply with FRA requirements for inspection and maintenance of rolling stock, track, structures, signals, and train control,
7. Develop training requirements for all job classifications, as well administering exams to determine a person's adequacy for the position,
8. Require periodic re-training and re-certification of employees,
9. Establish a security liaison position to work with security forces of the host railroads, on-line communities and counties and the state police,
10. Work with area transit providers and law enforcement agencies to determine where CCTV monitoring of stations and parking lots is warranted, and

11. Establish a program to educate children and adults about the commuter rail service and the hazards present around active railroad tracks.

4.3 Construction Guidelines

"As the sponsoring agency, Mn/DOT will control all letting and administration activities associated with commuter rail construction or implementation."

As the sponsoring agency, Mn/DOT will control all letting and administration activities associated with commuter rail construction or implementation.

Construction or implementation of a commuter rail line follows the Advanced Corridor Planning stage, at which time, a Major Investment Study (MIS), all necessary environmental clearances (Environmental Impact Statements or Environmental Assessments), preliminary engineering, and final design would also be accomplished.

There are several options a commuter rail implementation process could follow, namely, a design-build approach, a turnkey approach, or a traitional design-bid-build approach. The latter approach would necessitate the development of preliminary engineering and final design plans. The following definitions, per state statute, apply to the design plans:

Modern track construction using concrete ties and rail clips.

A preliminary engineering plan is a commuter rail transit plan that includes the items in the preliminary design plan for the facilities proposed for construction, but with greater detail and specificity to satisfy final environmental impact statement requirements. The Preliminary Design Plan is a plan that identifies:

1. Preliminary design plans for the physical design of facilities, including location, length, and termini of routes; general dimension, elevation, alignment, and character of routes and crossings; approximate station locations; related park and ride and other transportation facilities; and a plan for handicapped access, and

2. Preliminary plans for intermodal coordination with bus operations and routes; ridership; capital costs; operating costs and revenues, and sources of funds for operating subsidies; funding for final design, construction, and operation; and an implementation method.

   The preliminary design plan includes the preliminary or draft environmental impact statement for the commuter rail facilities proposed.

A final design plan is a commuter rail transit plan that includes the items in the preliminary design plan and the preliminary engineering plan for the facilities proposed but with greater detail and specificity needed for construction. The final design plan must include, at a minimum:

1. Final plans for the physical design of facilities, including the right-of-way definition; environmental impacts and mitigation measures; intermodal coordination with bus operations and routes; and civil engineering plans for vehicles, track, stations, parking, and access, including handicapped access, and
2. Final plans for civil engineering for communication, and other similar facilities; operational rules, procedures, and strategies; capital costs; ridership; operating costs and revenues, and sources of funds for operating subsidies; financing for construction and operation; an implementation method; and other similar matters.

"The final design plan must be stated with sufficient particularity and detail to allow the department to begin the acquisition and construction of operable facilities."

The final design plan must be stated with sufficient particularity and detail to allow the department to begin the acquisition and construction of operable facilities.

The Commissioner of Transportation may use a design-build method of project development and construction for commuter rail facilities. Notwithstanding any law to the contrary, the Commissioner may award a design-build contract on the basis of requests for proposals or requests for qualifications without bids. "Design-build method of project development and construction" means a project delivery system in which a single contractor is responsible for both the design and construction of the

project and bids the design and construction together. If a design-build implementation method is proposed, instead of civil engineering plans the final design plan must state detailed design criteria and performance standards for the facilities.

"all design and construction services will be provided in a manner consistent with applicable design, procurement and construction guidelines, standards and criteria endorsed by the American Railway Engineering and Maintenance of Way Association (AREMA) and/or those of the host railroad(s)"

Regardless of what administrative approach is selected for construction/implementation of a commuter rail system, agencies conducting commuter rail studies under the direction of the Commissioner, should not lose sight of the fact that the host railroads will play a significant role in any design or construction activities taking place within their right of way. Regardless of the method of service delivery ultimately selected, all design and construction services will be provided in a manner consistent with applicable design, procurement and construction guidelines, standards and criteria endorsed by the American Railway Engineering and Maintenance of Way Association (AREMA) and/or those of the host railroad(s). Talks with the host railroad should be conducted as early as possible and the construction agreement may be pursued as part of the railroad negotiations.

4.4 Operating Guidelines

Performance Standards

Recommendations aimed at ensuring the provision of on-time performance in a safe, reliable, cost-effective and responsive manner are:

1. It is a desirable goal to provide a seat for every commuter rail rider under normal operating conditions. Special events service and other atypical circumstances may occasionally require deviation from this policy,
2. Passenger loadings by train should be counted by on-board employees on each trip. While these counts may not be 100% accurate, they are a good indicator of the need to add cars to a train or to increase the number of trips on a corridor,

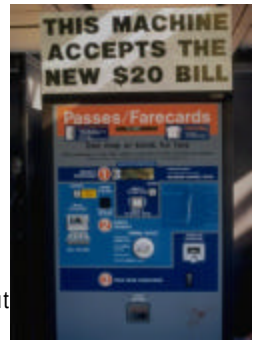
3. Agency administrative personnel should take the individual train counts and assemble these on a corridor-by-corridor basis to track the ridership from month to month,
4. To the extent necessary, on-train employee counts should be supplemented with contracted personnel estimating the riders boarding each train at a station in order to obtain reliable boarding counts by station,
5. Adopt and enforce stringent on-time performance criterion and ensure that these criterion are clearly stated in subsidiary operating agreements,
6. In general, on-time performance should be considered to be within five (5) minutes of scheduled arrival or departure, and
7. If a train is thirty (30) minutes or more behind schedule, riders should be granted a free-ride certificate.
8. A "guaranteed ride home" or similar policy should also be adopted.

Service Levels

Following are desirable opening-day service levels for the First Tier routes. These may be revised at such time as capacity modeling and further demand estimation work suggest otherwise:

CORRIDOR:	SERVICE LEVELS:
Dan Patch	Six (6) trains inbound AM peak; reverse PM peak. All service provided weekdays only.
Northstar	Five (5) trains inbound AM peak; reverse PM peak. All service provided weekdays only.
Red Rock	Four (4) trains inbound AM peak; four (4) trains outbound PM peak. All service provided weekdays only.

Adjustments to opening day service levels will be performed in a coordinated fashion so as to minimize any potentially adverse impacts on freight service as well as



"The final determination of appropriate commuter rail service levels will be subject to the Terms and Conditions inherent in any

the development of service on other candidate lines. Mn/DOT will serve as sole approving authority for such adjustments until such time as the Department delegates such authority and responsibility to another party.

The final determination of appropriate commuter rail service levels will be subject to the Terms and Conditions inherent in any related agreements for the provision of such service with the host railroad(s).

A typical automoated vending machine (AVM).

Station Spacing and Operating Speeds

Revision of maximum speeds, and from these the average speeds, may be made as a result of capacity modeling, subsequent revision of the capital program and on the basis of negotiations with the rail carriers. Station dwell times included in the average speed calculations should not be revised until specific rolling stock selections have been made.

Recommendations related to reasonable station spacings and operating speeds for commuter rail operations are:

1. The desirable spacing for commuter rail stations in outlying areas is 5 miles, though station spacings within the corporate limits of Minneapolis and St. Paul may be somewhat closer depending on need,
2. In outlying areas, stations need not be located every 5 miles, they can be further apart depending on development locations, major employment centers and significant highway intersections,
3. A maximum operating speed of 79 mph will be adopted and the system designed in a manner which encourages the attainment of this speed wherever and whenever it is reasonable and safe to do so,
4. Rolling stock will be specified to be capable of operating at this maximum speed,
5. As a means of maximizing operating efficiency, the system will be designed to permit the following average operating speeds on the First Tier routes, and

CORRIDOR:	**AVERAGE SPEED:**	
	To 1st CBD:	**To 2nd CBD:**
Central	26 mph	
Dan Patch	39 mph	36 mph
Northstar	36 mph	33 mph
Red Rock	38 mph	33 mph

"All engineering improvements to the railroad physical plant will be done in conformance with Federal regulations, AREMA standards and practices and those of the host railroad."

6. All engineering improvements to the railroad physical plant will be done in conformance with Federal regulations, AREMA standards and practices and those of the host railroad.

The Central Corridor mileage and running time is figured into the average speed calculations for each of the other First Tier corridors when extending the service to the "2nd CBD" in the table above. This corridor's average speed is also listed separately to illustrate the effect of the frequent station stops on this corridor. Average station spacing along the Central Corridor is 2 miles which, when coupled with civil and traffic restrictions, reduces the Central Corridor's average operating speed.

Fare Structure

The fare structure presented in the following table should be used as a baseline for on-going refinement during the course of Advanced Corridor Planning:

Fare Zone	Effective	
	Radius	Charge
1	0-15 miles	$2.00
2	15-20 miles	$2.75
3	20-25 miles	$3.50
4	25-30 miles	$4.25
5	30-35 miles	$5.00
6	35-40 miles	$5.75

The use of concentric circle fare zones (measured on a straight-line basis out from the central business district), as well as the five-mile radius between succeeding fare zones, is common within the commuter rail industry. Note that distance is measured as a straight-line distance, as opposed to the actual rail mileage from the CBD to that station.

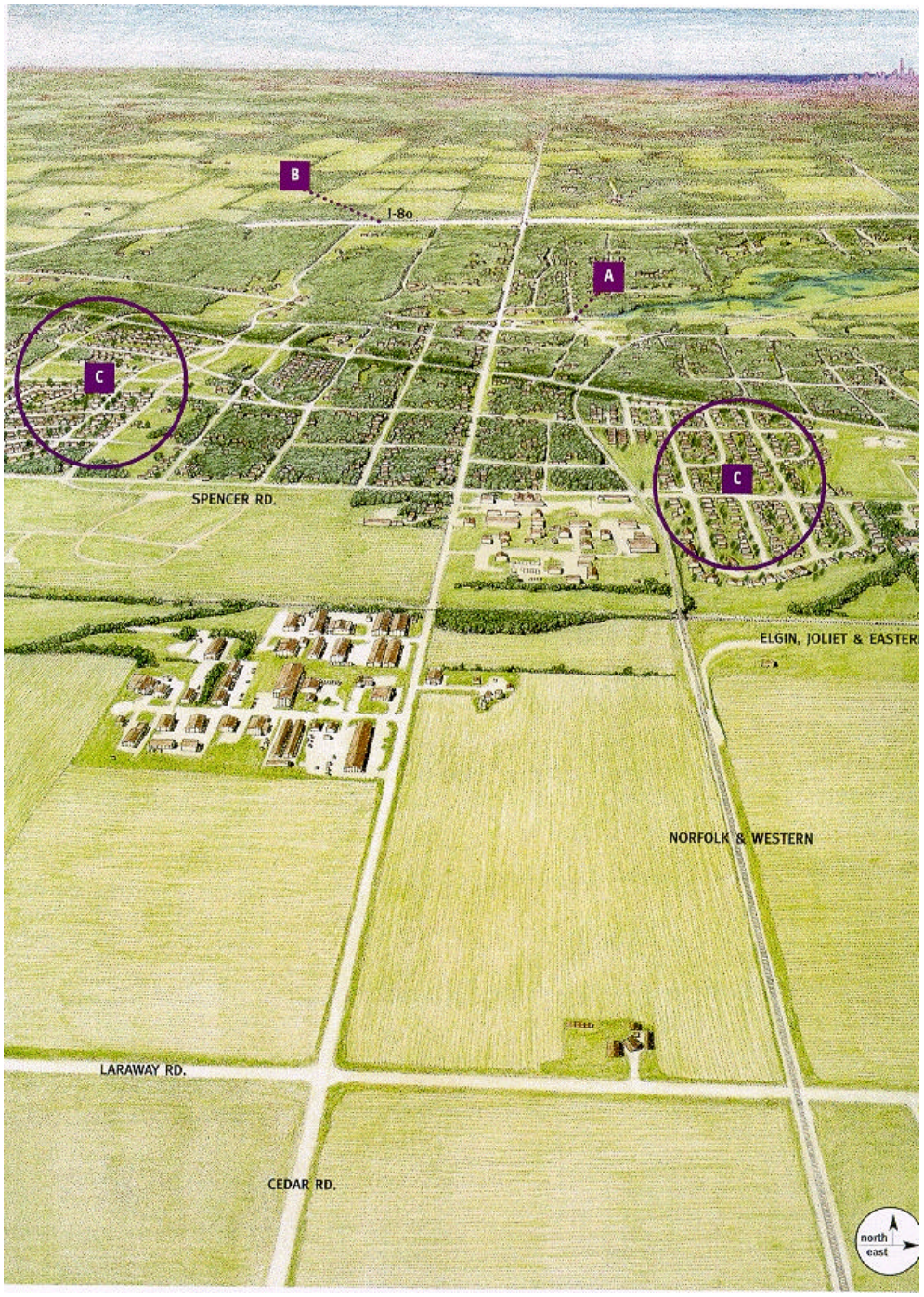
Suburb-to-suburb travel would be possible by purchasing a ticket good from the originating zone to the first CBD. If both the origin and destination were in the same fare zone, no additional charge would be collected. If the destination were in a fare zone further out than the origin, a zone charge would be collected on the train to the destination. This practice is consistent with that in use at other carriers having multiple lines radiating out of a CBD.

"The commuter rail sponsor will offer multiple-ride fare media"

The commuter rail sponsor will offer multiple-ride fare media, including at least a monthly commutation ticket, and will work with the other transit providers in the Metro area to develop a single, multiple-ride fare media that would be valid on all forms of transit to ease passage from one mode to the next. It would be good for transportation on all modes in the Metro area (bus, commuter rail, LRT, etc.). The prototype for this type of "one size fits all" ticket is found in the San Francisco Bay Area "TransLink" smart card.

present day

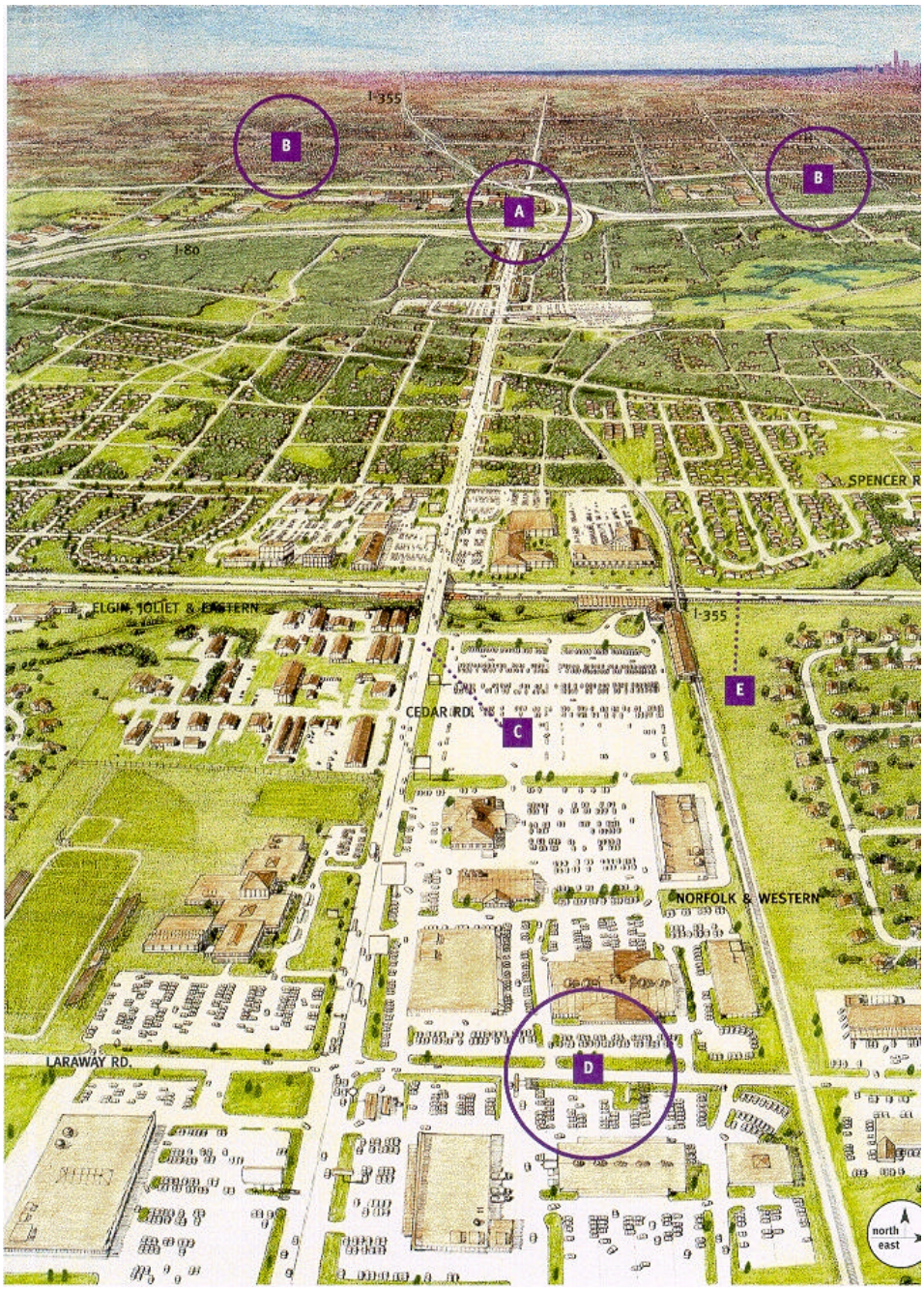
Situated in central Will County, less than five miles east of Joliet, the Village of New Lenox has evolved from a rural farming community of 4,000 residents to a fast-growing Chicago suburb of over 25,000 people in the past two decades. New residents are drawn to its friendly small-town atmosphere, good schools, relatively inexpensive home prices, plentiful parks, open spaces and commuter rail (A) and highway access (B) to Chicago. Viewing north, the recent residential growth is especially apparent both



Will County/New Lenox
Existing Conditions

conventional

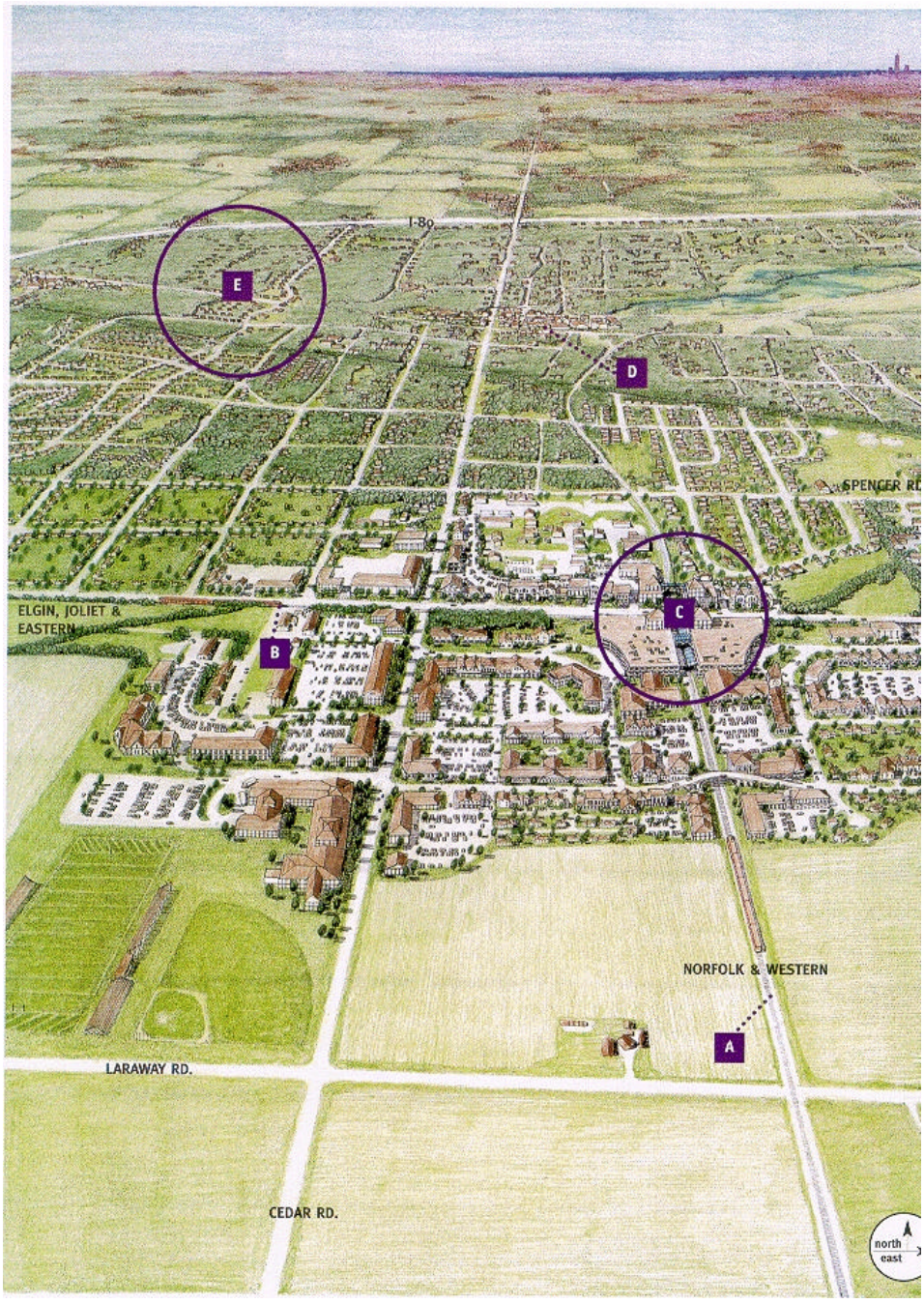
At what point might New Lenox attract too much uncontrolled growth? Regional planners project New Lenox will grow to over 40,000 residents by 2020, assuming the construction of the first leg of the proposed I-355 tollway extension. New retail, office and light-industrial development is planned near the I-355-Route 6 interchange (A). Neighboring New Lenox and Homer Townships could expect new residential development catering to commuters destined for job centers in the western suburbs (B). Typical highway-oriented planning would also call for the widening of Cedar road to facilitate tollway—induced traffic (C). The influx of residents and traffic will likely encourage additional auto-oriented commercial development in the area (D). The



Will County/New Lenox
Conventional Development - 2020

smart growth

New Lenox is blessed with abundant rail infrastructure that can help foster new development. The Norfolk & Western rail line will allow for additional commuter rail service to Chicago in the near future (A). Regional planners have also proposed the Elgin, Joliet & Eastern rail line, which connects Chicago's southern, western, and northern suburbs, for future intersuburban commuter rail service (B). The intersection of these railways offers an ideal opportunity for mixed-use retail office and residential development serving the needs of both local residents and commuters from neighboring areas (C). Clustering additional commercial development around the existing commuter train station (D) and directing new residential development to



Will County/New Lenox
Smart Growth - 2020

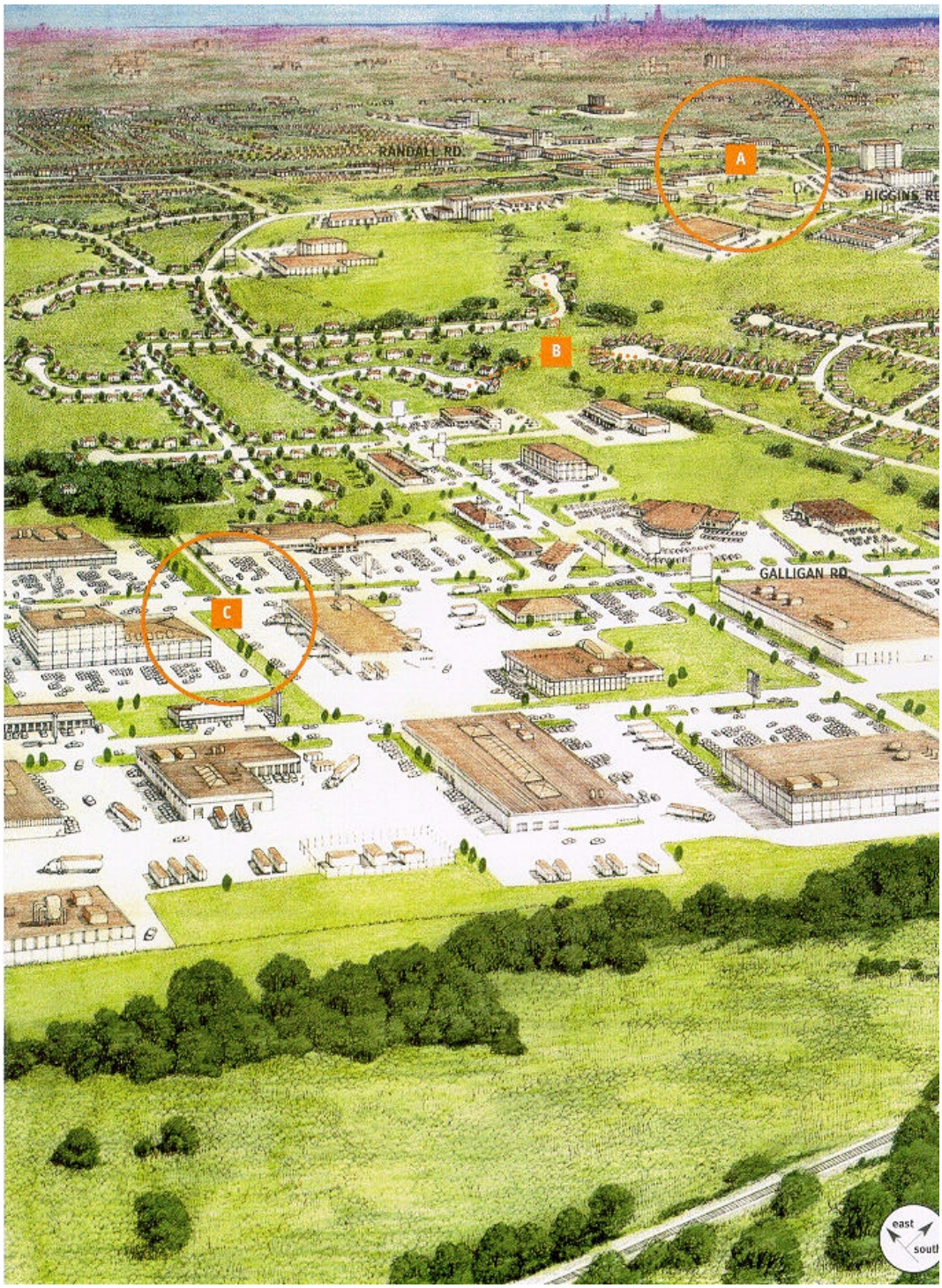
present day

The western edge of the Chicago suburbs now borders the Fox River, which once could be viewed as a natural growth boundary for the region. As growth hurdles beyond this threshold, towns like Gilberts in northeastern Kane County – about four miles west of the Fox River – appear destined to join this suburban mass. Encroaching urbanization threatens productive farmland and the county's rural character. Looking southeast from the northern portion of Gilberts, one can see expanding residential development in West Dundee and Sleepy Hollow in the distance (A). Not seen from the air are the

Kane County/Gilberts
Existing Conditions

conventional

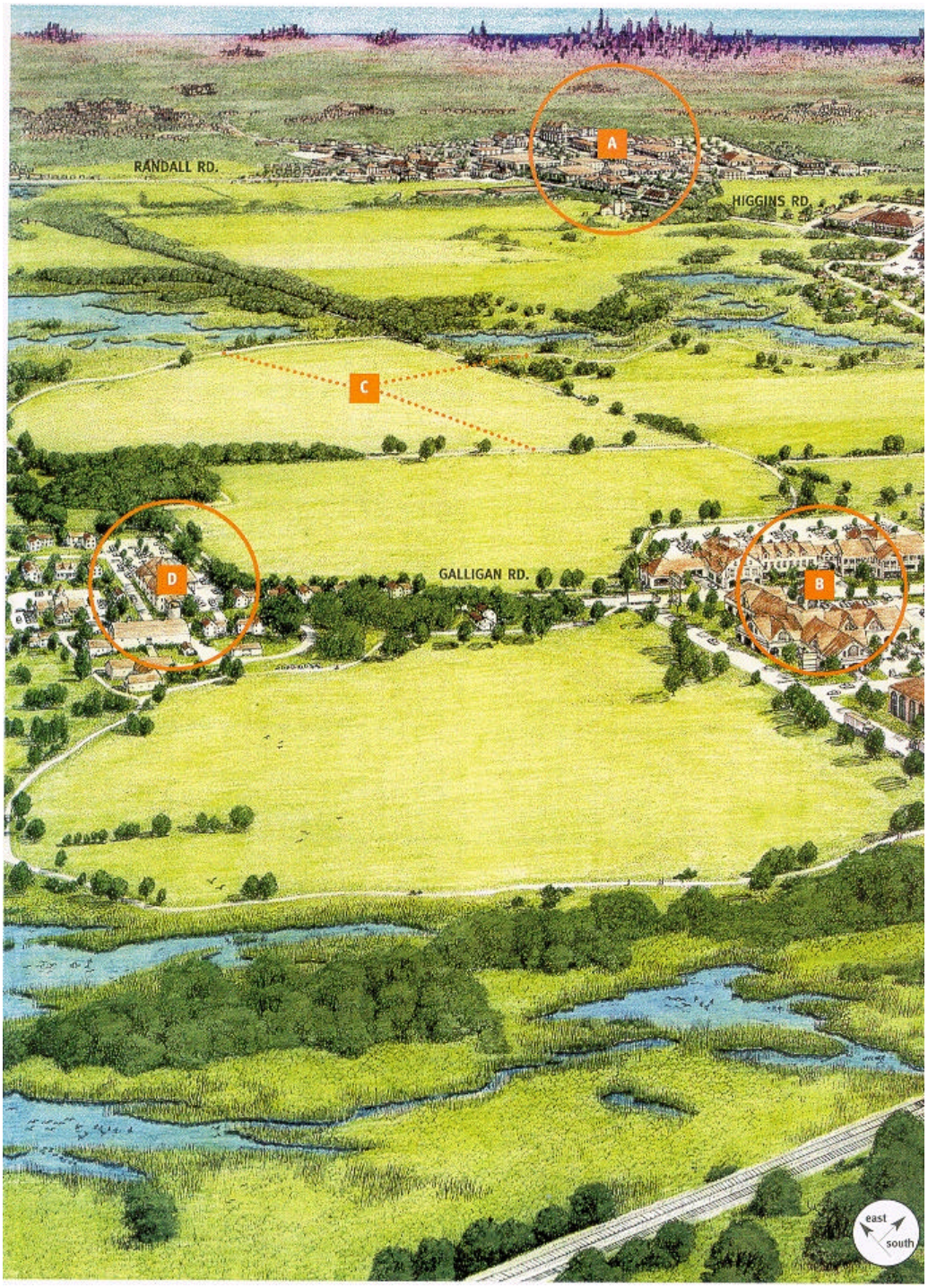
Randall Road, which connects to the Northwest Tollway just to the south of this vista, is expected to be a conduit for future growth in office and research development (A). Residential and commercial development will tend to follow new job centers. Typical planning, which emphasizes separate land uses, residential cul-de-sacs (B) and commercial and office buildings set back from roadways with large, individual parking lots (C) can quickly eat up the landscape. The quantity of development that occurs in this environmentally-sensitive area is likely to determine



Kane County/Gilberts
Conventional Development - 2020

smart growth

Development shaped around the area's attributes offers a sensible transition from the urban edge of the Fox River Valley to line vast agricultural lands of central and western Kane County. A new mixed-use development emphasizing office and research facilities at the Randall Roald-Higgins Road intersection (A) and an office and light-industrial development along Galligan road (B) will provide jobs and tax revenues. Maintaining higher density with two- and three-story buildings and parking structures allows for reasonable growth while preserving open space. The existing organic farm in the foreground and a bike-path network through naturally restored mudflats and wetlands (C) could be the basic for a small eco-tourism center (D). Coordinated planning among multiple jurisdictions and an aggressive program of conservation easements public purchases of land or



Kane County Gilberts

Smart Growth - 2020