21st Century Issues For Transportation Planners

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Abstract

The ISTEA changed the outlook for planning in dramatic ways. And there is much debate about what NEXTEA will bring or change. Changes bring challenges and opportunities. These produce many issues or planning challenges for the transportation professional today. For the profession to maintain its integrity and to advance, all involved in the planning and design of facilities need to become more aware of the broad issues which must be accommodated. These relate to more than the technical advancements. Some are philosophical, while others are procedural.

This paper addresses some specific important issues for the transportation professional. The intent is to stretch the professional thinking beyond parameters of technical matters to issues directed at arriving at consensus plans which can be implemented. Some of the issues and challenges addressed in this paper include maintaining the public trust, being comprehensive rather than exhaustive, creating a "level playing field" for the analysis of alternatives, separating "technical" from "political" decisions, recognizing financial competition, being "objective" in the analyses and in public meetings, identifying measures of effectiveness that can be measured, and developing a consensus.

This paper emphasizes the importance of working to develop consensus plans, for plan implementation is the goal. The transportation professional must be adept at recognizing the pertinent issues, addressing them, and making comprehensible explanations which can lead to sound decision-making by authorities. This requires the traditional transportation planning skills as well as the ability to work with citizen groups and government officials to build consensus and help make decisions.

ISTEA changed the outlook for planning in dramatic ways. And there is much debate about what ISTEA2 (or NexT or NewTea or whatever) will bring, or change. Changes bring challenges and opportunities. These produce many issues or planning challenges for the transportation professionals today. Perhaps ***change*** is today's greatest inevitability—technological, social, economic, and demographic change. Change can be viewed as either creating opportunity, or it can be viewed as a devastating influence upon individuals if it is ignored or unanticipated.

A 1996 issue of the *Professional Services Management Journal*[1] enumerated some changes shaping our profession. It was suggested that several forces are destined to change our profession forever. These include such items as FAX management, warp-speed service, working the 24-hour clock (due to global networks of offices), and producing mountains of data—more than any human can keep up with! But in our data driven society, the author points out that relationship-building is again emerging as the way to get ahead. Facilitators, rather than production oriented people, will be those who can make accomplishments that count. Looking backward it is easy to see how changes have driven us. But looking into tomorrow is a different story, and keen insight, anticipation, and preparation can be the difference between success and failure as we experience an increasingly complex and changing world. Technology is right there near the top of the list of rapid changes.

There are numerous planning issues for transportation professionals to face today and in the future. These range from technical to procedural to philosophical. The intent of this paper is to

address some of these planning issues to encourage discussion, consideration, and action on the part of all professionals involved. To maintain our integrity as a profession, we must incorporate into our efforts an awareness of both technical details and the broad issues affecting transportation.

These topics are addressed from the author's perspective based on some 40 years of transportation planning experience; they do not necessarily reflect the opinions of the Transportation Research Board or other organizations.

TRB Overview—1996

In its *Annual Transportation Overview*[2], the Transportation Research Board noted several key observations. These included the facts that most of the NHS already exists, but most as 2-lane roads; that about half of the nation's urban freeways are operating at capacity during peak hours, and that each dollar invested in preventive pavement maintenance pays off with 3- to 4-fold future savings.

TRB also noted some areas in which more effective technical tools are needed for environmental studies. These included analysis of wetlands, visual quality, and socio-economic impacts. These suggest some wide-ranging issues rather than those focused solely on transportation.

For the profession to maintain its integrity and to advance in the coming years, those involved in the planning and design of facilities need to become more aware of the broad issues which must be accommodated. A priority goal should be to achieve "win/win" situations.

The intent herein is to address transportation *planning*. This is from the viewpoint of engineering and transportation planning. In addition, the intent is to focus on the *long range planning* aspects rather than the entirety of the subject. Of course, a discussion of the subject requires touching upon system planning, corridor planning, route location, and major investment studies although the latter is not the focus of this presentation.

In order to address this matter, this paper is organized into two sections along with some conclusions. These sections relate to the question of whether long range planning is worthwhile and to a few of the technical challenges for the profession.

Is Long Range Planning Worthwhile?

What does "long-range" planning mean to you? Long range planning as used in this paper refers to developing a master plan, or a schematic plan, for a transportation system or facility, while looking ahead some 20 to 25 years. This "look-ahead" includes population, land uses, and transportation demand.

The time frame can be somewhat variable, but the intent is to be long enough to avoid near-term overcrowding and functional inadequacy as well as to give a good indication of where one is headed, transportation-wise. One might also say the time frame should avoid being so long that one has no hope of achieving acceptable accuracy in projections.

Long range transportation planning is at the very leading edge where one identifies what transportation will be needed to serve future populations. It cannot fully answer all of the questions one might pose about the future (even regarding transportation). There will be "forecast errors".

Transportation facilities create one of many land use categories, but it can exert a strong influence on how the others develop. We certainly recognize the interconnectivity and feedback relationships between transportation planning and land use planning, and it behooves us to plan accordingly.

Does anyone (here) question that long range transportation planning is worthwhile? Or, perhaps that it serves a good purpose in guiding decisions on future growth and transportation service? Let's look at this from two viewpoints-one is philosophical and the other is from some surveys of the profession.

In 1991, this Transportation Research Board Committee considering transportation planning for small and medium sized areas developed information on this subject.[3] A survey of Metropolitan Planning Organizations addressed the question of the value of long range transportation planning in guiding community decisions. Conditions have changed since 1991, but this work still provides a good indicator for our purposes here.

Planning directors (or their designees) answered this from four viewpoints-the General Public, the Business Community, Public Officials, and Professional Staff. Overall, 90% of the professional staff surveyed indicated that the effort expended to develop and maintain a long range transportation plan was worthwhile to guide decision-making.

Here are some of the reasons MPO directors indicated as advantages:

- It forces a review of where we are and where we are going.
- Long range planning process helps screen out "odd ball" projects.
- With multiplicity of local governments in the area, one long range plan prevents the conflicts of each having its own plan.
- Some problems must be addressed on a long term basis to have a larger plan to guide short range TSM type planning, which is piecemeal.
- It is just the tool needed to justify right of way acquisition at the time of land development.

On the negative side of the coin, several "hindrances" to the planning process were noted. Most of the responses indicated that the work was ineffective because others were making the decisions or because the plans addressed the wrong topics. For example, some indicated that the long range plans only endorsed existing projects, and others mentioned that no one followed the plans which were adopted. These problems still exist for the professionals involved in long range planning, and they certainly suggest a direction for improving the process-more meaningful involvement by the public and by elected officials.

Some Technical Issues

There are technical issues and challenges produced by the changing times. Over a period of time, there will be new procedures and techniques to be addressed and to be incorporated into the study processes. However, for this presentation, let's look beyond such matters as how to run a big highway network on an outdated computer.

These procedures include those established by policy, such as the directives for Major Investment Studies and other aspects of ISTEA. They also include technical improvements such as are associated with land use models. In addition, there are new or modified planning concepts such as are associated with Environmental Justice, Livable Communities, Sustainable Communities, and Least Cost Planning. These are important topics too broad to be addressed in detail herein.

Over the past several decades there have been shifts in the public's perception of its needs. In reality, the relative needs for investment of public funds are constantly shifting. As professionals in transportation, we need to recognize these trends and to seek to overcome the public apathy currently directed towards the transportation industry. This also requires recognition of other societal needs which make demands on the same source of funds-the public. The matter of the National Debt will be with us for decades, at best.

As we seek to maintain professional integrity and the ability to guide decision making, there are some technical challenges which require attention. These include such matters as contending with the impacts of the "communications revolution", the information highway as it were, the proliferation of technology, and of the aging population in this country.

Whether we like it or not, the profession is involved in looking into the future as a normal course of action. To properly do so, one must keep an awareness of trends in society in order to address a changing world with changing needs. Transportation planning engineers need to become visionaries in the positive sense of employing sound discernment and unusually fine foresight in the planning process.[4]

For this presentation, three topics are noted in particular-knowing how much study is enough, maintaining objectivity, and accommodating those whom some might view as extremists.

Knowing How Much Study Is Enough

A continuing dilemma in long range planning is to investigate matters in sufficient detail without taking too much time and effort. One must quickly determine those matters which contain "fatal flaws" and should be discarded. The time and effort should be directed towards advancement of beneficial projects rather than towards making studies. One should give sufficient attention to the question at hand, but one should not evaluate beyond the accuracy possible at that point in time in the overall scheme of things.

This requires a sound philosophy of approach for the various transportation planning analyses one must undertake. A large part of this philosophy is determined by federal, state, and local procedures, which continue to evolve.

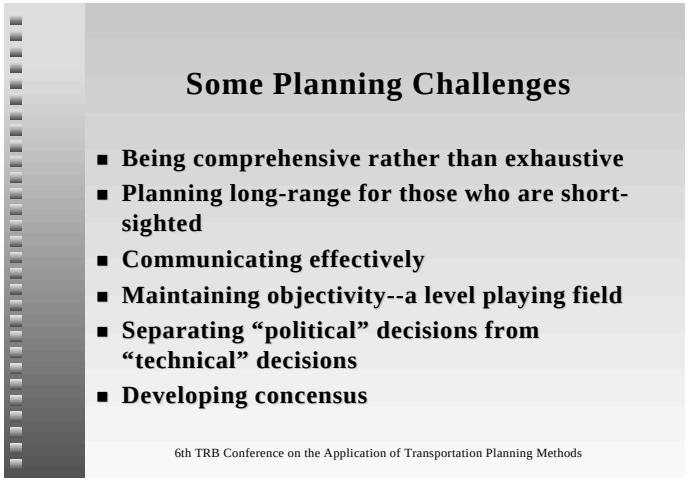
For the long range planning endeavor, three specific guidelines come to mind:

- *Be comprehensive rather than exhaustive in the approach.* Comprehensive suggests considering all applicable factors to a sufficient degree. An exhaustive analysis, as used herein, means

having studied an element to as full a degree as one is capable rather than to a degree commensurate with the process at hand. Even the "15 ISTEA Factors" require attention to detail from the viewpoint of controlling how much detail is needed.

Long range system planning should be followed by additional planning and design to address the many details for worthy projects. For example, "establishing a location" for a new, long range facility might mean a corridor two to five miles wide in outlying portions of urban areas during system planning. If there are significant issues to be addressed further, a major investment study could be appropriate at a later date to define the problem and potential solutions, while refinement of the location would take place in the route loca-tion/EIS phase of study.

- *Make allowances for the potential pitfalls.* Long range planning should give consideration to the "what ifs" and then make allowances for the unknowns rather than attempting to answer all questions. For example, one may not know the type of rail car or transit station that will be developed but can make cost allowances for several alternatives until later studies can produce more refined assessments.



  There are many pitfalls in long range planning associated with the uncertainties of the future. For many applications, the profession has developed highly refined (and useful) techniques utilizing mathematical models. The travel demand models are premier examples. However, the reality is that inputs to the models are fraught with weak data and future uncertainties. The predicted results are not likely to occur in detail—we only hope that they are adequate in gross.[5]

  Long range planning should make allowances for these pitfalls and shortcomings. Because of the great uncertainty inherent in all long term decisions, they should promote flexibility and omit details best decided on an incremental, short term basis.

- *Study what is vague more than what is interesting or easy to do.* The challenge in the long range planning process is to address the unknowns and the vague elements sufficiently to guide decision making. One should carefully anticipate the choices and issues that must be resolved as planning continues while recognizing that it is neither desirable nor necessary to decisions on all details. Thus, attention should be directed towards clarifying the vague areas sufficiently to proceed.

Spending too much effort on detailing the obvious and/or the more interesting concepts can be steps backwards for the overall effort. There are times when it is tempting to give only cursory attention to those items which are vague notions rather than to explore them sufficiently to understand the implications for the planning endeavor. On the other hand, there are times when, because one knows the subject, more than adequate effort is directed towards the popular and known concepts. For example, effort spent refining details of major street cross sections, or spent

defining an unwarranted but popular facility, might be better spent addressing other questions or other concepts.

All three of these ideas are incorporated in some recent endeavors. For example, considerable attention is now being given to the development of techniques to properly address the interaction, or feedback relationships, of transportation and land use. There still seems to be a need to further develop the techniques for integrating transportation and land use planning.

Another aspect of knowing how much to study an element is the matter of defining roles for the various disciplines involved. The transportation planning engineer is charged with the need to have a broad understanding and perspective on many matters that go beyond "transportation". These include land use planning, demand estimates (more than for transportation), environmental impact mitigation, and financing, to name a few. One does not need to be expert in all areas in order to give them proper weight and consideration using the counsel of others.

Certainly, different geographic areas and different times or circumstances will require different levels of study. Long range planning for transportation facilities should set a local stage for the future of the local area.

Maintaining Objectivity

In my mind, it is imperative that the professional not only maintain real objectivity but also portray that outlook to others. Everyone has some type of bias, thus this is a difficult goal for some to achieve. Objectivity as used herein means that one looks at all alternatives without prejudice and in a manner that permits true evaluation on the basis of the relative merits. Many see this as addressing the alternatives on "a level playing field" without having pre-judged some scenarios or alternatives as superior to others.

Perhaps the key to this is in establishing sound goals, objectives, criteria, and measures of effectiveness upon which to compare the alternatives. For example, in a multimodal corridor study one should establish criteria which fairly compare alternative modes of travel—e.g. they are reviewed using a level playing field.

Another aspect of maintaining objectivity is to recognize technical decisions versus other types of decisions. Usually, this is thought of as technical versus political. There may be sound technical reasons for selecting one particular alternative or direction of approach, but the decision may be made on the basis of a judgment of what is best for society (societal needs) rather than what is the best transportation solution technically.

It is incumbent upon the professional to identify those factors to be addressed technically and those factors to be left for others to interject into the process. One should also recognize that there can be a difference between interjecting other factors and simply having disagreement on the importance of certain criteria measures.

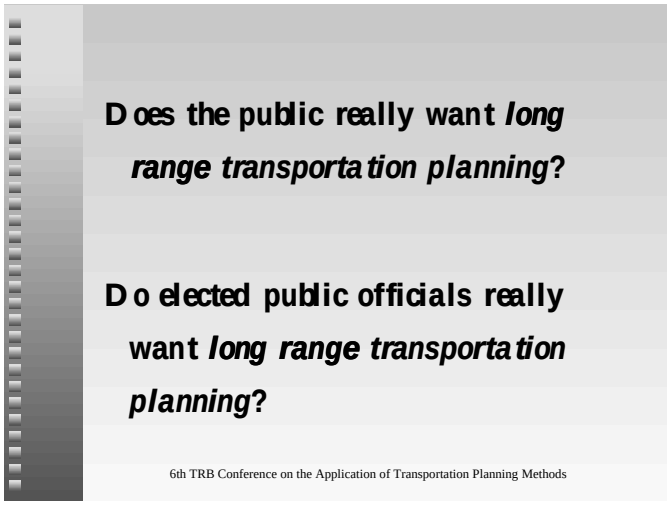
Accommodating Extremists

It is incumbent upon the profession to support what is best for the majority but doing so while continually keeping in mind the minority viewpoints. Who is out of step? It is not always a matter of the majority rules. Too often, one hears that the vocal minority-perhaps those who take the trouble to attend public hearings-dictate what is done rather than the majority.

The leader sets the pace, and the most knowledgeable should be the one to avoid the pitfalls. In long range planning, the professional responsible for the endeavor must work with individuals having varying interests, biases and understandings. There are likely to be those who hold what can be called an extremist's position on one or more matters.

Public involvement has been a part of long range transportation planning for decades. Rather, it has been recognized as a needed part of the endeavor. Some agencies and studies have had more meaningful participation than have others. Professionals should understand that the public involvement effort can help gain insight on what the real (and perceived) problems are, can be a starting point to establish support for the plan and to cause the plan to be implemented, and can be an educational experience. This latter item relates to both the public and to the professionals.

A critical element of this entire process is the development of consensus on what the transportation improvements should be. Where diverse interests and concerns are involved, there will be disagreement on the preferred solutions. However, a consensus is possible when approached adroitly with sensitive leadership.



Diverse outlooks are best resolved by up-front, open meetings and with meaningful discussion by the participants—not by lectures. Real discussion of issues must highlight areas of agreement and address the underlying reasons for areas of disagreement. Meeting groups must be small enough to permit thorough discussion, and results must be reported fairly to the larger groups and the eventual decision makers. Only then can the concerns be properly addressed. This also is best accomplished with not only leaders who are objective and have no bias but also those whom are perceived by the participants as being objective and having no study bias. The full study team of professionals must believe in approaching the entire process giving full consideration to all outlooks on a "level playing field", and this attitude must prevail throughout the process for true success in the long term.

Recognition also must be given to the fact that this or any similar process may not be able to achieve 100% agreement among the participants on all recommendations. This is certainly the desirable goal, with the primary objective being to create a win-win situation for all.

With these concepts in mind, one realizes that there almost always will be those who hold positions which can best be described as extreme. These extremists should be anticipated and should be given due respect while proceeding with the endeavor at hand.

Does the public really want *long range transportation planning*? Do elected public officials really want *long range transportation planning*? That is, do they really want to be told what is needed (long term) and how much it will cost and how to pay for it? There are experiences to support both "yes" and "no" answers. At the heart of the negativism here, one is likely to find problems with financing, involvement, trust and distrust of the process, and the relative importance of trans-

portation.

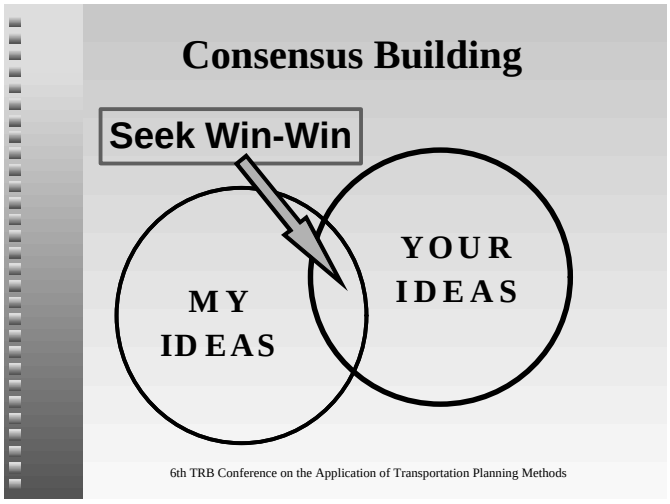
Philosophically speaking, there are those who appreciate the need for looking and thinking long term rather than seeking near term satisfaction. The profession must push itself and others to look and to think and to plan for a longer term than now seems to be popular. When funding is inadequate, the implementation program should be adjusted within the long term plan—and adequate funding to meet needs should be pursued.

Long range system planning needs to focus more on planning and less on details (which very often cannot be foreseen with any accuracy). The role of long range system planning is to anticipate the issues and choices that must be resolved as planning continues and to devise tentative (or preliminary) decisions on logical sequencing of improvements to meet needs over the years. This sequencing of improvements should be a guideline as to desirable staging of the system implementation based on a consideration of the potential outcomes (both positive and negative) from these choices. This sequencing should be done while recognizing that it is not necessary nor desirable to make a final decision about the far future—leave future decisions open until more and better information is available. In other words, incorporate future flexibility into the long range plan.

However, there are many who will start from the outlooks that there are more pressing needs of society than for transportation, that they do not want to be disturbed (NIMBY), and/or that they want to delay the decision until someone else has to face the problems. These are viewpoints which must be addressed by the profession.

There are circumstances when citizens are more concerned about their individual property values than they are about the needs of society. There are those who will correctly assess the impact of a transportation facility, and there are those who will err. There are times when leaders will be concerned with avoiding conflicts or divisive decisions.

For the transportation profession to maintain its integrity, the transportation professionals must be adept at addressing these issues, among others. We need to find “win/win” situations.



A couple of guidelines seem most pertinent. The process should attempt to arrive at consensus on numerous items and, as has been mentioned, this involves an educational experience for all. This requires both a diplomatic touch and a firmness at times. Perhaps one key is to insure that early consensus is reached on procedures and level of detail that can be addressed in the study. For example, in setting study criteria, measures of effectiveness which can actually be measured in the study are a necessity. One technique here is to recognize those items or measures which must be addressed in later, more detailed studies *if the decision is made to adopt an improvement program or to carry it forward.*

Hostile situations are likely to develop when spirited dialog evolves. This is especially true when there is a mix of opinions and outlooks. The transportation planning profession must endeavor to

address erroneous conclusions with correct information while avoiding the direct confrontation and showdown that can be so tempting. Usually, differences of opinion can be controlled and used to advantage by re-directing them to specific circumstances to which each might apply. In other words, by establishing which criteria apply to which position. Rather than take sides, the professional should illustrate applicability and facilitate discussion.

The transportation profession is deeply involved in looking into the future. We must be visionaries as well as practical planners. All planning is subject to periodic update in order to adjust for changes. On the other hand, one should have an adopted plan that is being used to guide development and decision making.

Everyone cannot be satisfied fully by what is done in the public's interest, but we can strive for "win/win" situations. Some recent experiences and some strategies for effective public participation are provided in the FTA Policy Statement, *Working Together on Transportation Planning: An Approach to Collaborative Decision Making*.[6]

For the transportation profession to maintain its integrity, the transportation professionals must be adept at addressing these issues, among others.

Some Conclusions

Professionals in transportation planning have more challenging issues than the rapidly expanding arena of technical processes. There are issues related to placing transportation into the entire fabric of society, and there is a growing challenge to be perceived by the public as being professional and fair. These are all important.

Those involved in long range transportation planning have some added challenges. They must push not only themselves but also others to look and think longer term than is currently popular. Immediate satisfaction, current year economy, one-term perspectives, "not in my back yard", and "not on my watch" may be very appealing to some. But the charge to the profession is to insure that in the grand scheme of things the general public is served by what is in its best interest.

How can the transportation profession help determine what is in the public's best interest? Certainly it requires an awareness of what the public needs in addition to transportation service, but it also requires an awareness of what the public *believes* that it needs. Perception is closer to reality than many might believe. Much of what is done today addresses these ideas. Some needs improvement.

Here are some suggestions for the significant planning challenges to professionals in long range planning:

- To be comprehensive rather than exhaustive in analysis approach.
- To make technical data and comparisons easy to understand (comprehensible).
- To maintain objectivity in identifying and analyzing alternatives.
- To provide safeguards for those who are short-sighted by looking sufficiently far ahead—i.e. long range.
- To accommodate extreme viewpoints while working diligently towards sound conclusions and decisions.

- To learn the art of developing consensus, or “win/win” situations.

These are important items in the development of study programs for long range planning projects. The availability of enhanced computer equipment and techniques permit the profession to both study and illustrate many matters which previously were difficult to explain to citizen and other groups. The transportation profession must be adept at recognizing the pertinent issues of a technical nature as well as of a decision-making nature. These need to be addressed as a matter of course along with making comprehensible explanations which can lead to sound decision making.

Notes

1. Stasiowski, Frank. 1996. “10 Forces Shaping Our Profession”. *Professional Services Management Journal*, Volume 23, No. 1, January 1996.

2. *TR News*, Transportation Research Board, National Research Council, Number 186, September-October, 1996, page 11.

3. Guyton, Joseph W. 1991. “Long Range Transportation Planning, a Troubled Process”. *Proceedings*, Transportation Research Board 3rd National Conference, Transportation Planning for Small and Medium Sized Communities, TRB Committee A1D05, Burlington, VT, (October).

4. See also comments by the author in “Long Range Transportation Planning for a New Era”, *Issue Papers*, Institute of Transportation Engineers International Conference, Monterey, California, 1992, page 77.

5. See also discussion in Chapter 3, “The Reality: Change Cannot Be Predicted with Certainty”, *A New Strategic Urban Transportation Planning Process*, Center for Urban Transportation Research, University of South Florida, June 1995.

6. US Department of Transportation. 1995. *Working Together on Transportation Planning: An Approach to Collaborative Decision Making*, an FTA Policy Paper, (May).