



City of San José
200 E. Santa Clara Street
San José, CA 95113

3 April, 2013

% Center for Advanced
Transportation Technology
University of Maryland
5000 College Avenue
Bldg. 806, #2203
College Park, MD 20742

www.advancedtransit.org

President

Stan Young

Vice President

Ingmar Andréasson

Treasurer

Tony Newkirk

Secretary

Kjensmo Walker

Chairman of the Board

Alain Kornhauser

Board of Directors

Will Ackel

Malcolm Buchanan

Mike Conwell

Wayne Cottrell

Rod Diridon

Bill Flanigan

Robert Griebenow

Richard Gronning

George Haikalis

David Holdcroft

Robert Johnson

Nathan Koren

Martin Lowson

Dennis Manning

Shannon Sanders McDonald

Peter Muller

Jeral Poskey

Jerry Schneider

Göran Tegnér

Open letter in reaction to ATN studies

The Advanced Transit Association (ATRA) has conducted a detailed review of the Automated Transit Network Feasibility studies that were conducted by Aerospace Corporation and Arup on behalf of the San Jose Department of Transportation, and published in November 2012. From these reports and the information presented, it is obvious that significant effort has been made to provide the City of San Jose in particular, and other interested parties in general, with an overview of the current state of the industry and the possibilities offered by new transit technologies. The Advanced Transit Association applauds the initiative, and is grateful that a discussion of fully automated and networked transit is once again in the public arena for consideration and debate.

ATRA wholeheartedly endorses the studies' essential findings that ATNs have the capability to provide a superior quality of transit service, with capital costs lower than APMs, and operating costs initially comparable to buses. The conclusions in this regard are positive and support ATRA in our vision to further the worldwide use of advanced personal transit that benefits people, businesses and the planet.

We also note the critical remarks that are made in the reports with regard to the industry. With our members deeply involved within the industry, we acknowledge the diversity in technology, different stage of development and varying market approach. The indicated current uncertainty about what ATNs (or PRT) now really are, what they are suited for, and what they represent, is a comment that we take to heart. At ATRA we believe the lead role in creating clarity for what Advanced Transit is, and what it can contribute, rests with us.

With the City of San Jose and its advisors indicating a desire to contribute to the public debate on the topic, ATRA is very much looking forward to working to create a better

understanding for everyone – especially those not involved with these types of transit systems on a day-to-day basis.

However, we also found certain questionable assumptions and constraints in the studies that may have unduly influenced some of the conclusions. This does not mean that the studies are invalid or misleading, but only that limitations in the context of the studies inevitably limit the applicability of the results. Small changes in the presumptions, methodology, or scope of the studies could have resulted in major changes in some findings.

We look forward to addressing these limitations and how these have influenced the results in the public debate. The assumptions and restrictions we would like to debate include:

- In order to remain unbiased and objective, a generalized assessment of the industry as a whole was a restriction on the work of the advisors. This restriction in the study did not allow for a distinction based on the maturity and/or completed development level of each concept. The members of ATRA are involved in concepts over the complete range of development, from conceptual ideas, to ideas in testing, to systems that are operational. Such a distinction within the study could have contributed to the reader's understanding of the study, without favoring a specific supplier.

- The results of the report are also directly dependent on the amount and quality of input received. It appears not all the major parties active within the industry have participated, or have participated to the same degree. The lack of broader or more detailed participation, for whatever reason, has restricted the research and forced conservative estimates to be the basis of the conclusions.

- There are several assumptions in the study that have led to the conclusion that ATNs wouldn't be able to handle the peak capacity in the network, occurring between Terminals A and B. Where perhaps each of the assumptions individually is valid from a conservative point of view, the combination of these assumptions leads to an overly conservative design:

- o The average vehicle occupancy is taken as 1.4 for the whole network. There are arguments to be made, based on experience with operational systems, that the average occupancy is likely to be higher. However, even when electing for an average occupancy of 1.4 over the whole network, it should be considered that the average occupancy for a specific connection is dependent on the capacity required for that connection. In other words: the average occupancy on strong links (between Terminal A and Terminal B) will be much higher in comparison to the weaker links (from Terminals to parking) of the network.

We note that this is a refinement of the figures that could quite easily be integrated into an updated version of the report.

- o The minimum headway is taken as 6 seconds, which is above what is currently achieved. The track utilization rate is conservatively set at 50%. The combination of the conservative headway and the conservative utilization rate results in an overly conservative (in our opinion) figure for the number of trips possible per hour. In combination with the low estimate for the occupancy on the strongest link in the network, this results in a skewed assessment of ATN capacity.

- The costs as presented in the study have assumed a worst-case scenario, with a large contingency having been taken into account. Risk mitigation should be applied not only to the technology selected, but also to the suppliers, project partners, organizational structure, financing, and contractual agreements between the parties. The project itself, especially when taking into account the suggested revised assumptions, is only of moderate size. And the infrastructure described, being of entirely conventional materials and construction, should not represent unusual risk.

ATRA appreciates the unfamiliarity and the uncertainty of the approach to safety as key factors influencing the perceived risk of the application. It is therefore important to work with local, regional and/or state authorities to clarify safety requirements to reduce this uncertainty. It is also key to investigate contractual arrangements that provide security to the City of San Jose as a customer, protecting it against the non-performance of a supplier.

With such measures being explored and the risk being reduced from a perceived to an actual level, the estimate for the costs should be recalculated.

- It should be noted that the fleet size used for the cost estimate, should be equal to the fleet size calculated as a requirement. The fleet size used for the cost estimate was 300, while the report indicated only 100 vehicles would be required based on the capacities and the conservative assumptions of performance.

ATRA looks forward to working with the City of San Jose and its advisors to refine and improve the findings of the study, leading to an even better understanding of the current and foreseen capabilities of ATN systems. We welcome an open dialogue and will collaborate as an industry representative to provide professional and unbiased feedback, insight and information with regard to all relevant matters.

With kind regards,

A handwritten signature in black ink, appearing to read 'Stanley E. Young', written in a cursive style.

Stanley E. Young, P.E., Ph.D.
President, Advanced Transit Association
University of Maryland
Center for Advanced Transportation Technology
5000 College Ave, Bldg 806, #2203
Office 301-403-4593
Mobile 301-792-8180
seyoung@umd.edu