

History of the Advanced Transit Association (ATRA) Year by Year

by J. Edward Anderson, first ATRA President.

2002 – The Twenty-Seventh Year.

ATRA Chairman, Tom Richert called the Annual Meeting to order at 8:00 pm on January 13, 2002 at the Washington Hilton. 13 Board Members and two other ATRA members were present. After the minutes were approved, ATRA President Dennis Manning summarized major events of the year as follows:

- The commencement of the update of the 1989 PRT report.
- Updates and revisions to the website.
- The work to define the mission and vision of the organization.
- The East Coast APM conference in July led by Larry Fabian.
- The ATRA booth at the ASCE APM conference in San Francisco.
- ATRA member presentations at the APM Conference.
- Assistance to local advocates in the Cincinnati PRT effort.
- Information submitted to the Elevated Transportation Committee on the Seattle Monorail.
- Recent progress roundup: ULTra, Megarail, research in N. Europe by Ingmar Andréasson and Arno Daastol, Palle Jensen's hardware progress, Cities 21's effort in Silicon Valley, Jerry Schneider's website.

The treasurer, Jeral Poskey, reported that the beginning balance was \$14,902.14 and, because of all the activity, the ending balance was \$6,169.01.

Bob Dunning reported on the progress of the new report on PRT. A final draft was anticipated by June.

Jerry Kieffer had been studying how to maintain ATRA's 501c-3 status. He moved that ATRA dissolve itself as a corporation in the District of Columbia and incorporate in the Commonwealth of Virginia. The motioned was seconded and passed.

Jeral Poskey had been studying concerns about the Journal of Advanced Transit. Its editor, Chan Wirasinghe, reported that the problems had been solved.

Jeral Poskey reported on his participation in a Stanford Business School program and felt that it was a good exercise for examining how a full-time executive director would work for ATRA but the funds available were insufficient for such a move.

Jerry Kieffer announced that the new officers would be Catie Burke president, Bob Dunning vice president, and Jeral Poskey treasurer. Tom Richert was elected chairman and Jeral Poskey secretary.

Tom Richert discussed an effort to identify a program for the association so that we could understand better who we were to communicate to outsiders and then to identify our major goals and objectives and their action items.

Jeral Poskey proposed a change in the membership structure to increase membership and revenue. This would require a change in the by-laws. A committee was charged to prepare changes in the by-laws for vote at the next Board Meeting.

The Board accepted a proposal by Larry Fabian to incorporate ATRA into his Transit Pulse news letter by requiring ATRA to commit to 100 subscriptions to Transit Pulse on a trial basis for the next two years.

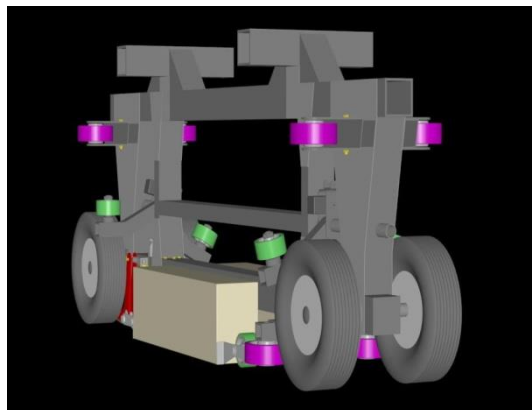
Larry Fabian proposed that ATRA sponsor a workshop, and he agreed to work out the details.

Tom Richert proposed a series of committees and to begin such a process he formed an Education Committee.

The Board discussed a series of advanced transit issues including the lack of impact that ATRA was having on decision making.

My work on PRT during 2002.

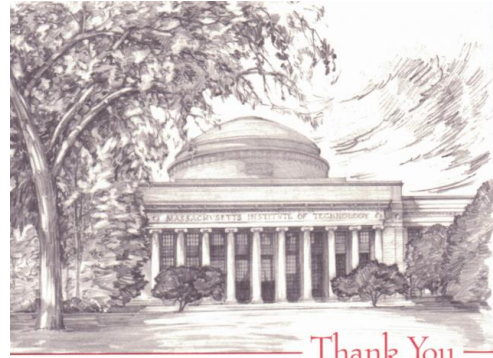
On January 14, 2002 I gave a presentation to the Monticello Rotary Club in Monticello, Minnesota, and the next day Shef Lang and I visited Knudson Construction Headquarters. One of their managers, Trevor Westrom, had arranged the meeting. The consequence was that Knudson agreed to join us as our constructor, i.e., they would build portions of our system such as the stations, maintenance shop, and foundations. This was a big plus for us. On the 22nd of January I gave a presentation to Buffalo County Commissioners in Buffalo, Minnesota, and the next day Scott Gaff and I had our first visit with Bob Nelson, Manager of the Mechanical Engineering Shop in the University of Minnesota Mechanical Engineering Department. Scott had been a graduate student of mine in the early 1980s. He knew Bob Nelson and had proposed that we build our chassis in his shop, a proposition that was very agreeable to me. We met with Bob Nelson every few weeks until the summer of 2002, by which time we had ironed out all the details. I hired a Mechanical Engineering student to make computer drawings of the chassis, the most complete of which is shown here. On Saturday, January 26th, I gave a presentation, courtesy of Rep. Mark Olson, to a large group of



students at Big Lake High School. On Monday, January 28th, Ray MacDonald arrived from the Far East to work with us full time.

I have mentioned that Professor Dick Goldstein, Head of the Mechanical Engineering Department, had nominated me for Fellow rank in the American Association for the Advancement of Science. I was elected by the appropriate AAAS body and invited to a ceremony to be held in the Sheraton Hotel in Downtown Boston on Saturday February 16th. This was of enough significance that Shef Lang and my daughter Candy decided to attend. Cindy, Candy, Shef and I all stayed with Professor Charles Harris at his home in Watertown, Mass., where we arrived on Thursday afternoon, February 14. The next day Shef had arranged for the two of us give a presentation to the Center for Transportation Studies at M. I. T. The response of one of the students is included here.

Saturday was the day we came for. AAAS is the largest and most significant scientific association in the world and has at latest count over a million members worldwide. I had been and still am a member with affiliation in the engineering section. The letter I received from the AAAS said that the award was for my work on personal rapid transit. The meeting at the Sheraton Boston began at 8 am with breakfast where the four of us sat together with four others at a nice white-table-cloth-covered round table. The breakfast was followed by several speakers, and then each of about 200 people elected Fellows that year was called individually and presented a certificate. As I accepted the certificate, the picture shown here was taken with the AAAS president. For me, I felt that this honor would enhance my credibility in promoting PRT. Ken Keller, a Chemical Engineering Professor and later President of the University of Minnesota, became an AAAS Fellow at the same ceremony, so I was in excellent company.

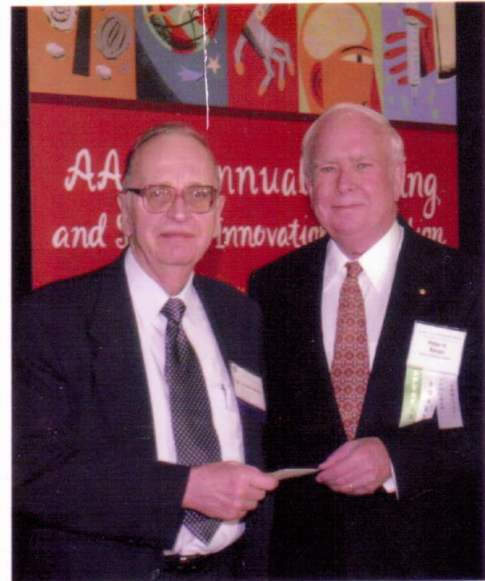


19 February 2002

Dear Scheff + Ed -

On behalf of the students, I wanted to thank both of you again for coming out and giving a great seminar on the Taxi 2000 PRT system. As you saw, a lot of people were really fascinated by the system, and I'm sure that we could've spent the whole afternoon talking about the system. I think that the whole politics of PRT would've been a fascinating lecture in itself—but we can save that for another time, perhaps. It was a pleasure and an honor to meet you both, and I hope to hear good results from the test phases.

Sincerely Yours,
Phyllis



 AMERICAN ASSOCIATION FOR THE
ADVANCEMENT OF SCIENCE

Fellows Forum
Boston, MA • February 16, 2002

The meeting ended in time for Cindy, Candy, and me to meet for lunch with Dick and Marion Radnor and Ira and Barbara Smith at Longfellow's Wayside Inn. It has been serving travelers along the Boston Post Road in Sudbury for almost 300 years, is a Massachusetts Historical Landmark, and is the oldest continually operating Inn in the United States. I had a great time updating Dick and Ira on our work.

On the way back to the airport Candy, Cindy and I had lunch overlooking Boston Harbor. Here is a picture kindly taken by our waitress.



When I got home, I had to busy myself with contacting potential suppliers of all the components we needed while others, mainly Shef and Joe Lampe, worked on negotiating and receiving investment funds under the SEC 504 offering. About 10 members of the Cincinnati Sky Loop Committee invested each between \$5000 and \$20,000. Several ATRA Board Members and members of CPRT invested each between about the same amounts, as well as other close friends and two relatives. We had decided that once we had received \$600,000 we would begin ordering parts, but if we could not receive that much by late summer, we would give the money back.

On March 5 about five of us sat around the conference table outside my home office to discuss the cabin design and construction. By this time, we had visited several possible companies that had the capability of taking on the cabin design and being established companies with graduate engineers trained in industrial design, to all of us except Joe Lampe they were far superior candidates. At this meeting, Joe Lampe in kind of a huff announced that he was giving Eke and Taft \$8000 to build a full-scale mockup of the cabin. Since he was committing his own money without asking for stock for it, we could have no objection. He must have already given Eke and Taft the money because only two and a half weeks later we were invited to inspect their plywood model, which was in a hangar at the Anoka County Airport, just a few miles north of my home. Ray MacDonald and Larry Jack joined me on this visit. In his introductory remarks, Taft commented that they could do styling on the cabin later. I didn't have to say a thing. Ray responded vigorously, as he always did, that styling was fundamental, not something that could be done later. We were not impressed with Taft's presentation, and noted now that according to this team aerodynamics was not important and styling could come later – how that could be done once the cabin shape had been formed was not apparent.

Representative Bruce Anderson of Buffalo, Minnesota, was continuing to push our cause and invited me to give a presentation to the St. Cloud, MN, Rotary Club on April 11th and then to the Sauk Rapids Rotary on May 22nd. On April 25th I flew to Omaha, Nebraska, to visit Insul-8, a well-known supplier of power rails for transit systems and other applications.

We continued to evaluate companies capable of designing and building our cabin and by April or May had concluded that the best option was a Minneapolis company called the Red Group. They

were an established company, producing designs of several types. They had a division in Ohio staffed by people who had come from the auto industry and who had been involved in automobile design. They had both industrial designers and graduate mechanical engineers, one of whom had a master's degree in mechanical engineering from the University of Minnesota. Shef not only knew the Red Group CEO but had good reason to believe he would invest in Taxi 2000. Sometime in early June at one of our meetings, Shef said "Let's give the cabin design contract to the Red Group." However, Joe Lampe objected strongly, so we agreed to have Larry Jack take the lead to invite both Eke and Taft and The Red Group to submit parallel final offers that would be evaluated based on a set of criteria given in our request for proposals. That process was completed by mid-August. Trying to be fair to Joe, sometime that summer I asked him if Eke and Taft had the capability to do the necessary structural analysis on the cabin, which I knew would be needed if the kind of lightweight cabin we needed would come out of the development process. Joe said flatly that "structural analysis was not important." So here we have

1. Aerodynamics is not important.
2. Styling is not important.
3. Structural analysis is not important.

Moreover, Eke and Taft proposed to take a year to finish the cabin, while the Red Group proposed six months. And the Eke-Taft bid was substantially higher. Who is the guy Lampe pushing Eke and Taft? I had his resume. He was not an engineer but had done construction work for his family and had developed a software program that Republican candidates for the Legislature used while running for office. His wife had been a Republican member of the Minnesota House of Representatives, so Joe was well connected with Republican Legislators. So here is a group with no real engineering background and with no visible experience in designing anything like the cabin we needed being pushed by Joe Lampe to be selected and at the same time without evidence bad-mouthing The Red Group, which was an established company with significant design experience. This is not the kind of situation I wanted to see us get caught up in.

That spring Kim In Key, in whose Seoul, Korea, company, Woo Bo, Ray MacDonald had worked had been talking to us about having us supply my control system for a PRT system he said he was developing. He and his son, Nam Ho, flew to Minneapolis to meet with us on June 27-28. When they arrived and after we went through the usual pleasantries he showed us some pictures of "their" test system. The guideway was identical to the Raytheon guideway, except the pipe was about 20 inches in diameter rather than 30. I say "their" because I found out later that that guideway had been designed and built by Posco Steel Company. Several years previously, I had been to South Korea and had given a lecture at Posco University. During the same period Kim In Key and his company had given numerous presentations on PRT planning work Ray MacDonald had led at various conferences in South Korea. One of the Electrical Engineering Professors at Posco University had developed a linear induction motor.

Evidently Posco Steel Company had become interested in PRT although at the time we knew nothing about it. I had, however, learned from Arno Mong Daastol that Posco representatives had been in Oslo trying to develop a relationship with the Norwegian telecommunications company Telenor. That relationship did not work; however Arno had introduced the Posco representatives to Sweden, and this led about three years later to the Posco test track in Uppsala called Vectus. It is shown here with its pipe guideway – a close copy of the Raytheon PRT system.



Posco's Vectus PRT system at Uppsala.

For an experienced engineer this solution is not surprising. In my case I had wanted to design an optimum PRT system and I had studied how to do that for over a decade before I plunged in on my own system, but only after being dissatisfied with existing options. In the case of Posco, the leadership must have decided that they want to enter the PRT field, so they would have to assign a group of engineers to do the job, and as is necessary they would give them a deadline. It is important to note that I plunged into design of my own PRT system in September 1981 with no one giving me a deadline. This is an extremely important detail. What is the easiest thing for the structural engineer assigned to design the guideway in a set period to do, having had no experience with PRT? He looks on the Internet and finds that a major American company has designed a PRT system using a pipe guideway. Likely his management has given him few if any design requirements, so what he will do is obvious. Now, in June 2002, Kim In Key told us to forget about designing our own system, just join him as a control-system supplier. That did not sit well with me at all. I knew what was wrong with a pipe guideway, and I had too much invested in my system work to just drop it. Moreover, Mr. Kim said that the money he needed would come from a new mayor of Seoul, which he expected to be elected in September 2002. It turned out later that he was not elected, but we did not know that in June 2002.

I learned later that Shef was much sicker with his cancer than he had let on. He was remarkable in his ability to keep his pain to himself. He apparently thought that teaming with Mr. Kim was a way to end his life having succeeded in getting PRT developed by investing into a control system for a Korean PRT system the funds we had received to build our prototype and had promised that that was what we would do with the money. Jeral Poskey had joined us a few months previously with his salary, Ray MacDonald's salary, and Larry Jack's salary paid by Shef in return for stock in the company at \$1 per share. Jeral had been following PRT for several years and now had a master's degree in business. So Shef decided to lead negotiations with Mr. Kim with only Jeral with him. Ray had worked in Korea for Mr. Kim for many years and I had had considerable contacts with him too, but Shef, now our Chairman of the Board and a person who by this time had invested considerable funds in Taxi 2000 took over the lead, notwithstanding that the CEO, me, should have been involved. Considering the situation at the time I did not object, but I was,

frankly, appalled at this turn of events. Shef worked up a Memorandum of Understanding with Mr. Kim, the work under which would be triggered by funds provided by the new Mayor of Seoul.

After Kim In Key left, we continued getting ready to order parts for the prototype that we had planned. In addition to working on the engineering, I gave a presentation in Phoenix to the Downtown Business Group on June 24th and to a Tucson Citizens Group on June 25th. My good friend and Scottsdale resident John Martinson had been instrumental in setting up these meetings.

In last year's account, in describing my activities re Taxi 2000, I talked of Turkey, Cincinnati, Seattle, and Delphi Auto. That is all ancient history now. All led to the conclusion that we simply had to build hardware before anything of consequence would happen. One of our guys found that the SEC has a plan under which a company can raise up to \$1,000,000 without the huge amount of legal and financial work required for an Independent Public Offering. We could raise money in amounts as small as \$5000 from up to 35 non-sophisticated investors if we didn't advertise any way except word of mouth from friend to friend. Documents were prepared and were finally out in April. Soon we had almost \$450,000 in the bank or committed. We were very sure we would have \$600,000 so that we could start ordering parts. There were nine people working for us and several companies committed to us too, as well as several component suppliers. Thus, barring any calamity, we could have our Phase I Prototype vehicle running on 60-ft of guideway in about four or five months.

We had calls from CBS in both New York and Los Angeles asking to be informed when we will be up and running so that they could come with their TV cameras. Here in Minnesota, three of the four gubernatorial candidates talk favorably about PRT. Only the Democrat is committed to continuing with light rail, i.e., the modern version of the 19th century streetcar, because of the federal money it brings in. One commissioner told one of our guys that frankly these projects have nothing to do with transportation. They are about how many yards of concrete can be poured, i.e., they are a means for sucking public dollars away from Washington and from the citizens of Minnesota into the pockets of the labor unions and the contractors. These projects are justified because of the problem of congestion. Obliquely the articles mention congestion and try with Madison-Avenue spin to plant the idea that conventional rail systems will reduce congestion, while admitting privately that they would not.

There were citizens' organizations in Minneapolis, St. Paul, Cincinnati, Santa Cruz, Austin and Seattle that urged consideration of our system, and in Minnesota both the Green Party and the Libertarian Party (opposite ends of the political spectrum) supported PRT. It was a real thrill to see all the volunteer help. We had an office at 8050 University Avenue in Fridley that would house four of our people and had room for our 60-ft prototype guideway and vehicle. We also had a site donated by Knutson Construction Company at 105th St. and Central in Blaine for our outside test track, but not the money yet for that. It was then roughly a \$12 million program. Also, there was a group making progress on the big money needed.

On July 24th I gave my usual presentation to the St. Louis Park Kiwanis Club, and then on August 9th Jerald Poskey and I flew out to Salt Lake City to give a presentation to a group of transportation planners. On August 15th Ray and I were invited to the Minnesota Department of Transportation

to talk about use of our system for freight movement. They were interested in a line between Medtronics in Fridley and the airport. The main output of this meeting for me was confirmation that staff members in Mn/DOT were highly interested in seeing our system developed. They of course had no clout. Other than these diversions my time was consumed with getting ready to order parts as we closed in on the critical \$600,000. Larry had set Sunday evening, August 18th as the deadline for input on the cabin-design decision.

Then a surprise came. I was asked to attend a Board meeting the day before in a Presbyterian Home where Shef was staying because his wife could no longer care for him at home. Joe Lampe had collared Ed Rydell and told him that if he was not put in charge of the prototype project immediately, he would resign from the company. He was not a Board member, and, in fact, no one had ever suggested that he should be one. However, because of his work on the 504 offering we had made him Treasure of the company. Why Rydell didn't ask me what my view was on Joe's insistence I will never know, but I do know that Joe knew that we were planning to give the cabin contract to the Red Group and he was desperate to have the contract go to his friends. At that Board meeting, Rydell moved that I be "promoted" to founder, that the CEO position be vacated, and that Lampe be put in charge of the prototype project. If I had been more up on our By Laws I would have known that if such a shocking resolution is offered, any Board Member could ask that the decision be delayed for three days. But what I did know was that according the By Laws the CEO was the only person authorized to sign contracts. I thus strongly resisted and Shef and Ed backed down. I remained the CEO. That was the most traumatic meeting I have ever attended. On Monday morning Larry and I visited the Red Group to tell them they had been selected for the cabin-design project. While we were there a fax came in from Lampe saying that I had no authorization to award contracts. Apparently Rydell did not tell him that I had not been removed from the CEO position. This delayed the meeting with the Red Group. I immediately went home and prepared a letter to Lampe saying that he was fired from Taxi 2000 and that he should turn over all our documents immediately. I sent it by Road Runner so that he would receive it the same day. He responded that only the Board could fire him, which was not true, the CEO could.

We needed to reach Rydell as soon as possible, so we invited him to a meeting at a Perkins restaurant on the following morning. In addition to Larry and me, Ray and John Braff attended. The others told Rydell what Lampe was up too in such strong terms that he went home and wrote a letter saying that he agreed with my decision. I immediately send it by Road Runner to Lampe, and thereafter he dropped off at least some Taxi 2000 materials at the Taxi 2000 office on 80th Street and University Avenue in Fridley. Larry and I went back to the Red Group and signed our contract with them. Following that I ordered the 60-ft guideway to be built by a Duluth steel fabrication company BendTec, ordered the work in the Mechanical Engineering shop to proceed, ordered two linear induction motors from Force Engineering, Ltd. in England, and ordered other parts. When we were finished ordering we had ordered parts or equipment from 26 companies. Al Eke died before the end of the year, so if we had given them the cabin contract, Bill Taft would have had the project on his own, which likely would have been a total disaster for the company.

On September 17th I gave a presentation to the local chapter of the American Business Women's Association and on the 19th to the North Star Chapter of INCOSE, the International Council on Systems Engineering. This meeting began a long and continuing relationship with INCOSE where I found that there were many qualified engineers who wanted to work with us once we could find the funds to build our test track – our next major phase once we had completed our prototype. On Thursday, August 22nd, Larry and I drove to an office of the civil engineering firm Short Elliot Hendrickson to visit with one of their senior engineers, Chuck Michael. He remained with me until summer 2014. Chuck said that his company wanted to work with us on the civil engineering aspects of our project.

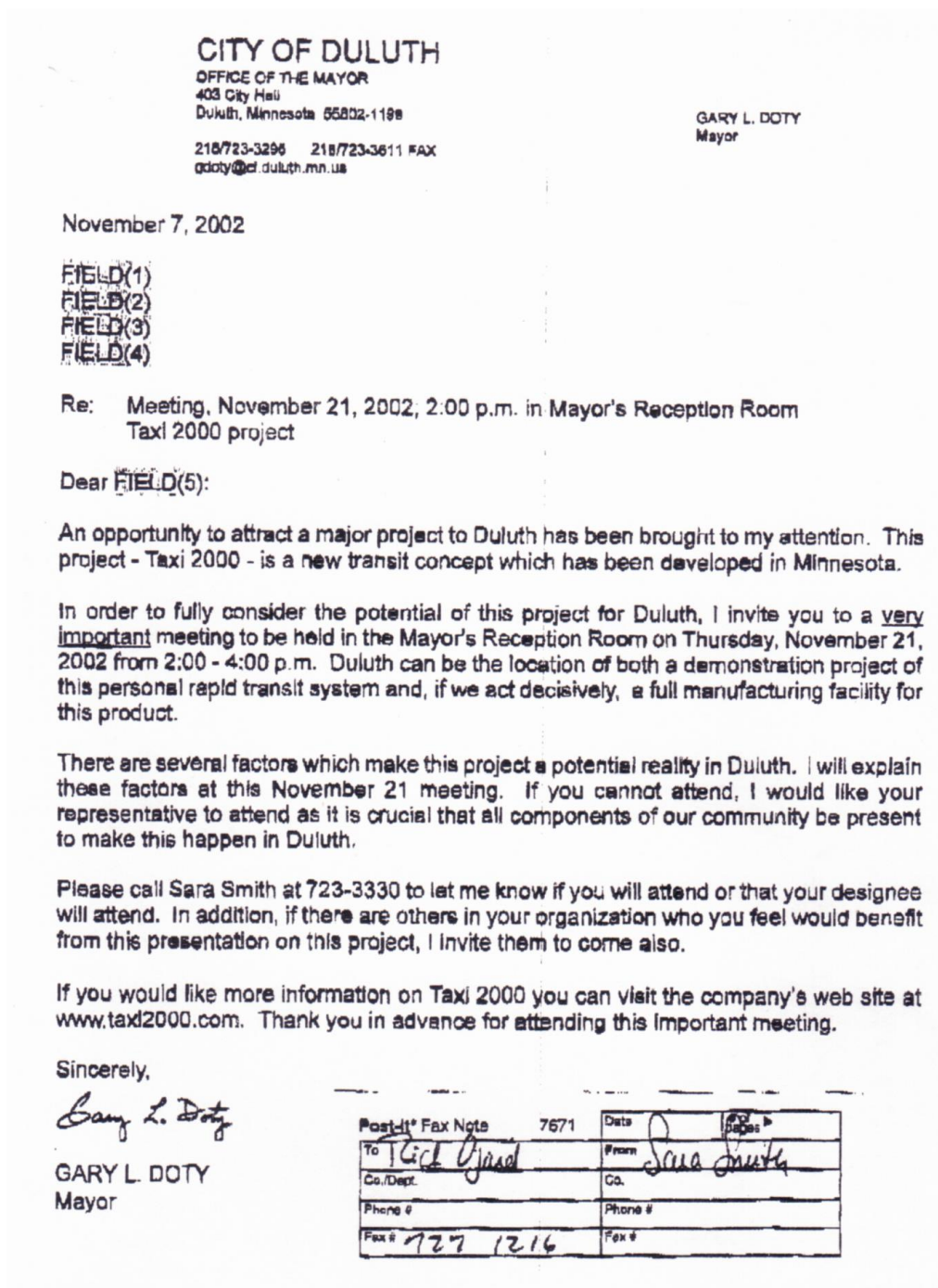
The Red Group got to work on our cabin as soon as the contract was signed. One of the first things they did was to make a plywood mockup, which is shown here with Scott Gaff, the guy with the beard sitting on the left in the seat. In the middle was Jack Rossbach, one of the guys working with us, and to his right facing the picture sits Margaret Beegle, who has for a long time been the most prominent driving force behind Citizens for PRT. I was the person standing back of the doorway on the right side of the picture. The man in the red sweater was one of the Red Group staff. After experimenting with the process of entering and leaving the vehicle, we became concerned that with the normal type of door, with the station platform at about the same level as the door, it was too easy for a person to bang his or her head on the top of the door frame. From these experimental results, we decided on an inverted U-shaped door that slid over the top of the rear structure of the cabin.



On October 18th I was interviewed on Joe Soucheray's radio program, which is broadcast from St. Paul where he also writes a column with the *St. Paul Pioneer Press*. One of the people who listened was Mike Lester. Mike and his wife had come to the Twin Cities from the Seattle Area because she had been hired as Marketing Manager at our law firm – Gray Plant Mooty, with headquarters in Downtown Minneapolis. Mike had left his job to enable his wife to advance her career and he had not yet figured out what he was going to do. He liked what he heard on Soucheray's program, so he called me and said that he would like to come to our office to meet me. We set it up for 10 am the next day. In an hour's conversation I felt that he could fulfill an important function for us – coordinator of all the suppliers we had settled on and in some cases were still looking for. I called the two references he gave me and found very positive comments from both. Mike had a bachelor's degree in petroleum engineering, spent a year on a drilling rig, which caused him to decide that that was too dangerous. He spent a second year working for Boeing in Seattle as a liaison between design and manufacturing. After that he and a friend started a waste-hauling business, which apparently was not difficult for him to leave in favor of his wife's opportunity. I had two of my colleagues interview Mike, because of which we had him start in the coordinator job

with the very low salary we were able to offer. He was a great asset as we assembled our vehicle, guideway, and stations.

A letter from Duluth Mayor Gary Doty is shown here. It indicates the strong interest for our project in Duluth. Yet later that interest appeared to assume that others would provide the funds needed to build our test system in Duluth. In a presentation I gave to the Duluth City Council I said that we would commit to Duluth if the City would provide \$5 million to match other needed funds, but that was too much – the funds never materialized.



On December 11th I gave a presentation to the Duluth Engineering School, invited by the Dean of Engineering, who had gotten most interested in a Taxi 2000 project in Duluth that could involve engineering students and faculty. While in Duluth, we visited Bend Tec and took this picture of our guideway under construction.



That fall we had been contacted several times by staff involved in planning a large mall in Syracuse, New York. They said they needed a PRT system and liked our system. They invited me to visit their office in Syracuse on December 12th. Jerald Poskey came along as by then he was our lead person in the marketing and business-development. The meetings went extremely well, but any action depended on them getting the funds to build the mall, which they estimated to be about \$2 billion. Those funds never came, which was just one more of many disappointments.

Good progress was being made on our chassis, as attested by this picture in which the wheels were not yet attached. From left to right you see Ray MacDonald, Scott Gaff, the mechanic Robin Russell, who was building the chassis, and Kurt Allen. Russell said that it was one of the most interesting projects he had worked on.



One of the people attracted to work with us was a St. Paul architect. In September 2002 he told me he would design the two stations for our 60-ft system and would complete the design in October. Knutson Construction Company had agreed to assign several of their carpenters to build the stations. When October came he put off completion until November. In November it would be done in December. In December he announced that he and his family were taking a two-week vacation to Hawaii and that he would get on to the station design in January. That was too much for us. We had established a schedule for completing our system and now that schedule could not be met. So, risking offending the architect, I asked Ray MacDonald if he would design suitable stations. He said that he would and produced the needed designs by the next day. Here is a picture of the system as it appeared at the Minnesota State Fair a year later. The Knutson carpenters got right to work and had the stations complete before the architect returned from Hawaii. He was furious with me, and unfortunately now I had made a second enemy. The architect was a volunteer and had not been paid, but



he had taken such ownership that he seemed to feel that he owned the entire project. This was a serious problem with working with volunteers. As we thought about building our half-mile-perimeter test system Chuck Michael told me that before his firm hired any new person, that person was subject to a three-hour interview by an industrial psychologist, a process that weeded out about 40% of the applicants. I resolved to follow that process, interviewed the psychologist, and have kept him in mind ever since.