The Sky Loop Committee of Forward Quest

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**Answers to CALSC Questions for PRT/Taxi 2000**

1. Q: Who will inspect and certify that the system meets public safety standards? Are there such standards? If not, how long will it take to develop such standards? Does going over a river require special standards, inspection and certification?

   A: First, here is what we said in our response to the Measures of Performance:

   - Because Taxi 2000 is a form of public transit that has been fully designed, but not yet built, and because Taxi 2000 and other PRT designs are totally different from other technologies, existing fire codes and regulations will have to be applied to the Sky Loop in a way that is reasonable.

   - There is currently under way creation of a new ASCE Standard for Automated People Movers, which will include standards for PRT. The CALSC's PRT consultant, Sam Lott, is on the committee writing this new standard, and Sam and Ed Anderson of Taxi 2000 are consulting on how Taxi 2000 solves all the various fire and safety issues. Hopefully this new ASCE standard will incorporate the Taxi 2000 solutions, so that we can refer to this new standard when dealing with local fire codes and regulations.

   - Sky Loop stations are designed to go inside buildings, or outside. Guideway may also be attached to buildings.

   - This unique technology will thus involve compliance with local building codes. Until presented to local authorities, we cannot know what they will require.

   As to who will inspect and certify the system meets "public safety standards," this will likely be the city fire and public safety officials from the three cities. The local building codes of all three cities will have to be reviewed in context of this new technology. Assuming the new ASCE national standard is adopted by the time we are ready to build the Sky Loop, we would ask these local officials to look to this standard for engineering and safety recommendations, to be adopted in the local building codes, where local codes would be at variance with the ASCE standard. It is also assumed that the ASCE standard would incorporate national fire safety codes in its new standard.

   How long will this take? Sam Lott stated that the ASCE standard has been under way for several years now. While no timetable is known to us, Taxi 2000 plans to work with this ASCE committee to get these standards finished and adopted during its three year prototype development phase.

   Going over a river might require special considerations. Certainly walkway access would be required. The KYTC would have to approve the method of attachment of the guideway and supports to its bridges. We are not aware of any other special requirements, but this would need to be researched further in a later phase of the CALS.

2. Q: PRT proposes vehicles that can be programmed and sent to a destination without an operator. Some proposed PRT routes pass federal buildings in Cincinnati and Covington. Will federal authorities, while reviewing safety from terrorist acts, allow an unmanned vehicle to approach and stop at or in or near federal buildings? Has there been such a federal review, or discussions of such a review? This kind of terrorist/safety concern will probably also affect private building owners.

   A: We don't know what federal authorities would say about PRT, nor have they been asked. However, terrorist acts are extremely rare in the U.S. Would a PRT vehicle with a capacity of three or four people, or 650 lbs, be more tempting to a terrorist than a bus with 46 people or a light rail vehicle with 200 people? We doubt the presence of a driver would be any deterrence to a terrorist. Station cameras would increase chances of being caught. The 650 lb maximum load and distance of the PRT guideway from a federal building makes significant damage to the building unlikely. Private building owners who consider stations will have to make their own safety plans, but again, terrorist activity is very rare.

3. Q: How large are the support columns for the track and how far are the columns from the face of private property line buildings?

   A: Taxi 2000 support columns are 20" diameter at the base and 12" at the top. Typically they would be located over the edge of a sidewalk a foot from the curb, or in a median strip between sidewalk and curb.

4. Q: How would you place columns where cornices of historic buildings extend over sidewalks?

   A: Our route avoids most historic areas. As most downtown sidewalks are 8' wide, it isn't likely a cornice would hang over the entire sidewalk. Further, such cornices are likely to be well above the 24' height of the PRT guideway and vehicle.

5. Q: How would a third level of pedestrian movement help to activate the urban/city fabric (create vitality)?

   A: Our SLC paper, " Sky Loop-Effect on Downtown Retail," distributed to all earlier, answers this in some detail. Generally, we believe that making it much easier for people to get around the downtown area will enhance the vitality of the area. Many believe the Skywalk enhances downtown retail now by making it easier for office workers to get to the retail area during lunchtime. The Sky Loop would simply widen the area served. However, because the guideway would be outside, where all street activity would be observed while riding, it would be less isolated from such activity than the Skywalk. Further, we think station advertising of special events and individual stores would help.

6. Q: Explain what would be involved with moving or relocating a station? (i.e. emergency stairs/escalators, elevators)

   A: Exterior stations are pre-fabricated and erected in sections. They can be disassembled easily and moved to a new location. Stations inside buildings would be specially designed, and normally not moved. This would be a decision for the building's architect.

7. Q: How would this system handle large crowds efficiently? How long would it take to load a crowd after a large event, such as a Reds game?

A: With four 14-berth stations around the stadium, the Sky Loop system could take away 10,000 to 12,000 people each hour. This is equal to 200-250 busses, and more than double that of a single LRT line operating a 200 person capacity train every 2.8 minutes, as proposed by the I-71 Study.

8. Q: If a user is at street level and has to climb stairs or use the elevator, both to and from a station, isn't this a real effort for the user, involving a great deal of time and inconvenience?

A: The typical station will be 20' above street level, or two flights of stairs. Climbing or descending would take under 30 seconds for most people. If you need the elevator, it will be waiting for you. The car will likely be there when you get up to the station. This compares with waits of up to 20 minutes for a bus or light rail car. Which is more convenient?

9. Q: Wouldn't large structure columns and beam systems affect future development or cause building owners to work around structure and compromise on an effective development for the private property owner?

A: See answers to Qs 3 and 6. Also, posts and guideways are pre-fabricated, and can be moved easily. PRT is much smaller than the AGT systems being considered, of course.

10. Q: What is the relative capital cost to the taxpayer to install?

A: See the Sky Loop Financial Plan.

11. Q: What is the relative annual cost to the taxpayer to operate?

A: See the Sky Loop Financial Plan.

12. Q: After installation and setup, is it self-sustaining and/or profitable?

A: Yes. If our projected capital and operating costs are "in the ballpark", then the key question is whether the revenue we project will be too high-or too low! This will require a serious market study, sometimes called a mode split analysis. Prior such studies, while few, indicate a 25-35% split for PRT. We assumed 20% in Plan D of the Sky Loop Financial Plan. We have said all along that such a study will have to be done by the CALSC, either now or in a later phase.

13. Q: How does one access a station located inside a building after office hours if the building is closed?

A: This will be up to the building owner. If he wants station access after hours for employees, this could be built into the Sky Loop computer with a special station access code on such employees' Sky Loop Cards.

14. Q: What about patron security at remote stations?

A: During peak hours other passengers will be on the station platform. During off peak hours empty cars will be waiting, so passengers won't wait at all on the platform. Stations are designed with no place to hide; they will be lit at night; and closed circuit TV cameras will monitor all platforms continuously. Stations will also have motion sensors, so when someone enters a station at night, central control will be alerted to watch. These stations will be far safer at night than most parking garages, lots, or bus or light rail stops.

15. Q: What would be the hours of operation?

A: 24/7.

16. Q: Once a destination is selected, can it be changed once inside the vehicle?

A: A passenger can always select the next available station. He can't select any other station. He would have to get out and buy a new ticket (or use his Sky Loop Card) to select the correct station.

17. Q: Can parking meters, signs or streetlights be attached to the support columns?

A: Yes.