

BUS RAPID TRANSIT WORKSHOP
“Action Plan for a Thriving BRT Market

Los Angeles, CA – April 8-9, 2002

Draft Notes by Gregg Moscoe, WestStart–CALSTART

****Not for general publication****

Intro

David Mahill MTA Representative

Tour

What's happening with BRT in Los Angeles
Changes in the MTA

FTA Perspective- Partnership with MTA on BRT Program

Bryan Williams, Dep Mayor, City of Los Angeles
Proud of Partnership with MTA with Caltrans & MetroLink
25 million Pass per year

Roger Snoble MTA LA
LA Biggest transportation Lab in US
MTA is a TRANSPORTATION Authority, many areas of responsibility
BRT is one aspect
2100 Buses
Largest CNG Fleet in world
Getting costs down comp to diesel
Tier 1 - Trunk routes, rail lines, Rapid
Tier 2 - Local community routed 40-60% inside local sector
Tier 3 - Smaller neighborhood routes, shuttles, Access Services

Rail -

MetroLink 5 county system, focused at Union Station
Redline Heavy Rail 150,000 boardings per day (Hollywood Highland recently opened)
Blue & Green Light Rail - Blue to Long Beach, Green to near the Airport

MTA and Muni County operators partner on local operations
1,750,000 boardings per day

Basic Problem is US's worst traffic congestion. Most of area auto dependent
Freeways known as lineal parking lots (Roger's avg speed over last 6 months is 12 mph)

MTA is trying to provide better mobility to address 3 mill growth in 20 years

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Working with LA DOT, largest network of HOV Lanes
Not all connected, buses don't always run on them. However, Carpooling doubled.
405 opening sped up car pooling and main lanes.

Better ways to move people needed. BRT is one of the more innovative systems to come around.

Light rail has been good, but need is expanding and it fills a gap where rail viability is questionable.

Average system speed on streets 10 mph. Rapid bus has proven to be 25% faster, which improves efficiency. If system will save money and time, you will get ridership. Rapid bus demand is exceeding supply. Challenges remain, but it is a viable model.

23 add'l Rapid route lines identified, working with cities and county to accelerate deployment.

Some innovations would help: Exclusive lanes, better signal coordination, etc. Trying to match right tools to right job.

LA and Long Beach Ports form 2nd largest port in America, which poses significant challenges.

Hope to learn from attendees.

Back to David

City of LA has been major partner with MTA, FTA is another

Wm P. Sears, FTA

FTA is here to listen. Looking for thoughts and ideas on BRT.

In definitional terms, what is BRT?

Washington is not prepared for BRT: There's no space in capital programs

Regulatory and testing, it isn't specifically pigeonholed.

Legislators and staff are not knowledgeable overall

2003 is the year that the TEAs are rewritten, and this is the opportunity.

Largest non-defense appropriation in budget, reauthorization is crucial

Pres. submits in FY '04

DOT has to submit prior Labor Day

FTA must submit mid summer

Ideas needed now.

Q: Buy America Provision -- Is there a possibility to lower the 60% content threshold

from '82 bill?

Politics fierce on the hill, tough to lower now, but now is the time to try.

Staff thoughts are not focused on Buy America, looking to other areas.

Whether such requests would make it through congress is a big "if".

Reauthorization in LA: how can we all work together to get more out of each dollar that Calif sends to Washington (we get 88 cents back).

Everything - gas tax structure, transit funding, etc - is uncertain.

Discussion is between White house and Congressional leadership.

Sec of Trans thinks predictability and stability paramount in next iteration.

State by state allocation is unclear, will be studied by Congress with FTA available as a resource. Too soon to make any predictions.

Western states - Denver, Salt Lake, Vegas - are getting higher profile, will energize Congressional reps, may influence allocation formulae.

50% of the members of the House were not in office when TEA 21 was enacted.

Outcome of major issues is hard to anticipate. Previously under Chairman Schuster, it was clear. Not now.

Q: Will FTA see BRT as the next great program?

There is a possibility that FTA can advance BRT as a new technology.

There is a new perspective on reauthorization: there is not lots of new money to develop new programs.

With respect to Buy America and other regulations, if one must get a waiver, maybe program needs to be revisited.

Q: what hot buttons is FTA working on at the moment that affect BRT?

TEA 21 reauth issues and priorities.

Highest priority according to sec and admin. - Communicate that TEA 21 has worked well.

Significance of ICE TEA is the I, Intermodalism. E- equity of TEA 21 - is the key, putting infrastructure on level with education and other great social arenas. Too early to dive in at FTA right now with specifics, because they don't exist.

DOT for 2.5 months has been going through grass roots review of programs in each transit mode sitting down to see what's worked or not under tea 21 and reporting that up the ladder. That's being evaluated now.

Within FTA, William has set up group to do the same thing internally.

At Administration level in surface transportation, gas tax revenues down, AMTRAK is an issue.

Q: Cliff Henke, NABI - Congress has traditionally responded to conflicting agendas by growing the pot. Are there any ideas where additional revenues may come from?

Enhancing innovative finance programs, and coming up with new ones.
Initial steps are modest, only \$14 billion out of \$218 billion are leveraged with private dollars.

There need to be ways to get more private funding into the process.
Dept of Treasury testified in hearings about gas tax revenues, which appear to have a shakier future than they have in the past. What will replace that in the future?

Other Hot Issues: Beyond Highway issues, safety and security in aftermath of 9/11, are critical.

REX Gephart, LACMTA

MTA BRT has increased speed of transit by average 25%
Ventura Route 16 miles, Wilshire Route 25 miles
Ridership up as much as 38%
Bus stacking is sometimes a problem, but coordination with traffic control is helping
Corridor transit potential, density, employment and economic determinants were used to select 23 potential routes, of which 6 are being implemented currently.
Deployment on others is being determined

Second Phase is designed to begin a network in conjunction with existing routes, creating 4 N/S and 4 E/W routes. Eventually 60-70 % of county routing will be on the BRT routes

Current 40', 45' low-floor buses are serving, but single- and double-articulated low-floor buses are being reviewed.

Elements of success

MTA and City Partnership

Political support from Mayor and MTA Board

Media Support (innovation makes news)

Impact on travel time (implement all attributes at once)

Simplicity of station design and operating environment

Team approach (design/build led by planning with operations, Cit and consultants participating)

Edward Thomas, Assoc. Admin. FTA Office of Research, Demonstration and innovation

The Administrator has jumped in to the transit arena.

Public transportation industry needs to improve bus systems, and LA has demonstrated viability.

Beginning with trip to Curitiba with Martha Wellborne and Surface Transit Project, LA

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has been on the cutting edge, also with modular vehicle projects.

Hi-quality, hi-performing attractive bus programs across the country desirable.
Expanding global industry is essential, with our manufacturers competing with overseas companies.

Action Plan for a thriving BRT Market

Recent Developments: Driving Factors
Civis Decision
Bus Testing Workshop
APTA Procurement Task Force Report
Bus Standards Efforts

Market:

Civis letter requested waiver to test buses

Definition was not intended for Civis like vehicles
Facilities appropriate to Civis not available at Altoona
Requirements formed a barrier to technological innovation

Results:

New Vehicle definition agreed to
Prototype testing exemption from 5 to 10
Invitation for industry involvement

Bus Testing Workshop Results:

Gathering at Penn State Center focused on BRT issues

Definition of special purpose vehicle
Absence of local BRT conditions at Altoona
Need for systems integration testing

APTA Task Force highlighted problems in procurement:

Industry is operating on low margins
Needs to address sharing the risk of development
Who is responsible for systems integration
Standards for electronics and systems are essential for bus and rail
Research is underway on studying issues for transit, and to link with SAE and other organizations
ITS from automotive side is helping push transit side innovation

Proposed Actions

Vehicle Testing Procedures

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Assess Altoona capability
Prepare draft testing procedures
Review draft testing options at LA BRT Workshop
Finalize procedures at APTA Bus Conference

Proactive Vehicle Deployment Guidance
Review results of APTA Procurement Task Force Report
Assessment of useful life
Analysis of cost performance - Low bid out as sole selection

Streamlining BRT Project Development
Scale process in accordance with BRT project scope - new start or...?
Organize technical advisory teams
Conduct site visits - putting vehicles on street alone is not enough, getting community buy-in, getting consumer buy-in in design, appeal, routing, service, etc.

Manufacturer Outreach
Partnership strategy
Kick-off meeting
Analyze demand for BRT vehicles

Communication

Strategy

Draft Action Plan
Next Steps
Finalize Action Plan
Conduct site visits
Organize BRT Conference Planning Committee
Conduct Vehicle testing Workshop at AOTA Bus Conference, Minneapolis MN May 9,2002

Session One: Special Vehicle Testing

John Powell, Moderator

Bert Arrillaga, Speaker

Special Purpose Vehicles:

Guided Vehicles, with dedicated guideways, auto-docking other features.

Urgency for deployment in US

Irisbus/Las Vegas received 10 vehicle exemption.
Eugene request under review.

FTA wants to see demonstration results in operational environment.

Review of special purpose vehicle testing criteria TBD

Definition of vehicle: not bus, not light rail
Data collection process during demo projects
Meet with Manufacturers on issues, data
Data gathered from other governments: France, Netherlands, etc.
On-site data gathering in Las Vegas, Eugene
Analysis of testing for BRT, what's appropriate, what works

John Powell, Moderator

Seven Tests, including Altoona at Penn

5,000 defects discovered, 100 potentially serious

Testing is of value to FTA, and to grantees, because of data gathered and money saved.

Manufacturers have benefited from finding problems prior to service.

Cost of BRT platforms is significantly higher, so testing provides positive value.

Joe Calabrese
John Marino
Cliff Henke
June DeVoll
Paul Szilagy

JC

BRT isn't really a bus, doesn't fit with current testing.

Determine acceptable level of risk regarding special vehicles deployment sans Altoona style testing.

Timing is critical: buses must be ordered by June to be in service in '06.

Initial demand is relatively low: how will R&D be funded, how will the risk be shared?

Can manufacturers shoulder more of the testing?

JD

Las Vegas supported Irisbus with waiver request

Timing was critical.

Las Vegas will be the first, but don't want to absorb all testing costs.

Irisbus is testing in France. Las Vegas will provide a different and significant testing environment that would not be found in Altoona.

CH

Timing is critical, because of required lead-time.

BRT is flexible, as LRT was.

Exemptions should be limited, definite.

If dedicated route is part of definition, much of the cost benefit may be sacrificed.

Testing regime should reflect actual operating conditions, including mixed use with traffic.

Data from other governments is positive, but should be subject to understanding and definition.

Decisions need to be made re: which Altoona tests are applicable, and others needed.

JR

BRT is low-cost alternative to LRT.

Balance the value of testing against deficits: potential protectionist tendencies, impeding of new technology.

Testing adds to cost, extends deployment time, and ignores the fact of testing on systems already in service in other countries.

Paul Szilagyi

Law currently requires testing, because in past some vehicles did not perform properly, or safely.

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New vehicles, such as hybrids, have had arduous times passing the tests, but the outcome can be considered positive.

Testing cannot be revised to cover all technology, and should not be a barrier to adopting innovative designs.

Q: What is the goal of testing for BRT or other special vehicles?

Andy - Ebus

Cost \$25K plus shipping and four months on their new vehicle. Why is testing considered an obstacle?

Margaret N., MTA -- When is FTA report available?

Bert A. - First draft is under review, and it may be made available if it's deemed useful.

Q: Will FTA report include info from French or Netherlands testing?

Bert A, -- Not included in original design. May be included in final document, or may be issued separately.

Brian M, Gillig - Supported waiver for Civis, but doesn't see necessity of setting aside Altoona for BRT/special vehicles. Modify Altoona

Council member Bryan Wear from San Diego - Testing needs to be established quickly, because need and demand is there.

Dave - ISE Research - Do we want to allow for many different types/makes of BRT, or just two or three specific types, which can be tested?

Q: On-site testing has value over regulated track.

Marcel at FTA - Early definition was general. If definition calls for change, that should be done, so that waivers are for exceptions. BRT is a service, as much as a vehicle. Altoona should be able to test BRT, addressing issues such as low ground clearance. Goal is to establish a testing facility that addresses a wide variety of conditions found nationwide in transit environments. Testing is designed to help manufacturers uncover problems and save costs for transit agencies.

Q: Should BRT testing incorporate some elements of LRT testing? Research should be done to determine proper testing for BRT.

E. Thomas - We are not trying to skirt issue or protect programs, but there is a question of business models. Nothing is in concrete. There are things that need to happen, and we

don't want to look back at confusion. Other programs have had mixed results. A business model is of concern.

Alan H of Mission Group - If testing is going to occur, 1) what can be done to speed up, 2) how can testing done outside US be utilized to speed up certification/testing procedure, and 3) what do we call it?

FlexTrolley tested positively. Test groups saw Civis more as a rail vehicle than a bus.

Richard Hunt , MTA - Testing is valuable, but real testing comes in service. Operating environment provides challenges not found in contained testing environment. In Paris, the testing is being conducted in service environment. MTA may have had more success with more in-service testing.

Q: The issue is balance. Too many waivers won't achieve goal, too tough will inhibit innovation. Crash-worthiness standard has been an obstacle to new vehicles from outside the US.

JP - 4 of 5 bus manufacturers seem to be supporting testing. How that testing is done seems to be the question. In Altoona testing, wheel chair lifts failed. This prevented failures in service. Testing protects investments by FTA and agencies.

Session Two: Partnerships and Outreach to U.S. Bus Manufacturers

Walt Kulyk, FTA

Calstart has helped significantly in organizing this event, along with MTA. They will become sort of our executive secretariat for BRT, they have a wonderful cadre of personnel.

John Boesel, Calstart

John has been in his position for about six months, and he will be speaking about BRT and about Clean Mobility, which will fold in with what we're talking about.

Weststart-CALSTART Overview

Non-profit involved with advanced trans tech and alternative fuels

Virtual cluster organization, with diverse participant group

Spur technology

Work with fleets to provide clean fuel solutions

Partnership with FTA

BRT Design Competition

BRT Expansion

Drivers for Cleaner, more efficient vehicle
World vehicle registrations spiraling upward
In 1950 there was one - megacity, now there are 19
Six countries account for 12 the worlds population increase

US Air Quality worsening
Over half the US Pop breathes unhealthy air

GHG emissions growth closely tied to vehicle growth

Calif. CO2: Over 50% comes from transportation, since power generation is not coal-based.

Energy Insecurity

Most US reserves drained, 70% will be controlled by OPEC in future.

BRT is an emerging opportunity and technology
European BRT uses new designs and propulsion systems, while US uses fairly conventional platforms.

To attract riders, BRT will have to move toward quiet and clean.

Natural gas as a fuel has proven value in fleets of many kinds. Particularly in high-mileage vehicles, it's a good match.

Hybrid-electric: Toyota and Honda the leaders. All major car companies will have by 2004

Toyota and Hina are working on a fuel cell bus.

Allison Hybrid Electric Drive is moving aggressively into the transit arena, as is BAE.

Capstone Turbine is providing its microturbines for hybrid electric bus applications.

The U.S. Army is very involved in hybrid development, to reduce the motor pool and expand versatility.

Virtually all major companies will be offering fuel cell vehicles, some are talking bringing to the market in next few years.

Fuel cell buses are also in various demo projects here and in Europe. CARB transit rule is driving this in Calif.

FCVs are where the transit industry will be going, but when and how is unclear. EVs, HEVs and NGVs all support getting to FCV.

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Electric Trams are testing in Europe, with street inlaid power, overhead and free-standing power approaches being studied.

Civis can operate on a number of fuel and drivetrain systems.

In 2001, Calstart co-sponsored the BRT Design Competition, managing the competition and providing technical advisory committee to entrants. Attracted competitors from around the world, in academic and private industry teams. Several approaches were selected as finalists. Full size articulated designs to narrow land and chained personal vehicles were submitted.

BRT is an opportunity to rethink connections.

Station car programs: Calstart has worked with BART and PIVCO on sharing programs. Ford bought PIVCO and made it the basis of its Th!nk City car.

Emotion will be using smart cars in a car sharing program with MARTA in Atlanta, and it will later be deployed in California.

WestStart-CALSTART is launching first Clean Mobility Center in Long Beach at Transit Mall. Features conventional and electric bikes, scooters and Th!nk City cars.

Afternoon:

Brian MacLeod

Walt Kulyk- FTA

What are the issues?

US Bus mfg industry is not responding quickly enough to meet demand for BRT projects.

Fed Govt must respond. Waivers are being reviewed for testing, foreign-built products are under consideration because domestic suppliers are not moving ahead quickly with similar offerings.

Local and regional transit agencies want the clean transit option BRT offers.

Perhaps the US Industry doesn't understand BRT, which can be addressed with education.

Government regulation may be stalling the movement, and must be addressed.

What is the solution?

Normal competition? Perhaps.

Maybe the US Gov't needs to involve itself in public private partnerships to support R&D, education and commercialization.

The BRT Design competition was meant to foster innovation, rather than concrete designs.

Direct gov't assistance may be another avenue.

Procurement and policy regulations and grants policy procedures need to be revisited, particularly regarding new/innovative technologies.

FTA proposals:

Meetings for feedback, with mixed audience and directly with mfg.

Joint partnerships for development

Follow-on from the competition

Coordinate with Industry Groups

Revise existing procedures and develop new programs to benefit BRT and bus industry.

Issues:

Buy America

Procurement Regulations

Partnerships: Making them work

Standardization: Leadership needed

Cost-effective approach: more tech for the buck

Moving forward, in a timely fashion to address needs

Partnering with domestic and foreign partners to bring technology and practices to the market.

Back to Brian, Moderator

XXX

John Andrews -MCI

Cliff Henke

Rick Brandenburg

Paul

BRT needs:

Advanced tech
Speed
Comfort
Quieter

Maybe product needs definition, because US Mfg can meet most of the criteria. With some time, it can be brought to market.

Curitiba and LA MTA have used fairly conventional Phase I vehicles.

Phase II vehicles - hybrids, with enhanced interior and technology - can be provided in short order.

Phase III vehicles need to be defined in terms of needs.

Transbus was tried 20 years ago, and it didn't work.
ATTB was attempted 5 years ago, and it was not successful.

Realities exist: Buy America is a law, supply side is weak. Heavy-duty suppliers are in low ebb.

Perhaps a two-stage approach is workable.

Bill -Ebus

Mfg small electric buses and trolleys and turbines powered vehicles.

Has invested in R&D for specific market vehicles, with advanced technology.

Mega-Transit properties are not the best prospects for such a company.

BRT does not lend itself to commodity typing or pricing.

Larger mfgs cannot abandon profitable lines to pursue advanced technology with considerable risk.
RFP process is problematic.

Is partnering possible? Will the market be big?

Partnering is key, but is not supported by current process.

Back to Brian.

John Andrews, MCI

MCI is an intercity bus mfg, has been in and out of transit market.

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Went into transit coach business, then got out.

In last five years, MCI has grown in commuter bus market

MCI's buses used extensively in BRT/New Jersey market.

What do customers want: comfort, visibility (cruiser windows) and... ride the train.

MCI's open to partnering, and learning.

Back to Brian

Cliff Henke

Mfgs are able to deliver some technology and design now.

They will intro 3 new models in fall, which are responsive to their customers. Have BRT style compo-articulated bus on the drawing board, but probably won't be deliverable in next two years because of barriers, including regulation/testing process and economic considerations.

JJP with modifications may have appeal to get advanced designs off the ground. Changes in the RFP process could be helpful.

Back to Brian

Rick Vandenberg - New Flyer

Intro'd low floor buses to North American market.

Learned a lot about making the bus the market wanted.

Next gen bus is in process, but took 1.5 years to get that into development.

Mfg funds its own R&D, and takes the risk.

Would like to see more Fed funds pushed to private side, to assist in R&D.

Would like to see 5 year projections, to give a longer view.

What are the criteria? How do you define it?

Lack of standardization contributes to cost. Establishing product standards will result in better product, lower cost.

Back to Brian

Paul

Private company that pushed technology. Has fleet in Denver, serving substantial ridership.

System has built-in incentives and disincentives.

Technology has a curve that is steep in beginning, which then leads to increases in use as adoption increases. Market curve does not reward the innovators.

The question is will our society reward innovation, or will slowness in innovation continue to be rewarded.

Back to Brian.

Designs and definitions

Standardization

Partnerships

Sharing the risks

Q- Joe: Image is important, and some mfgs are ahead, others are at level one or two in styling. Can we improve image, design, visual appeal?

Brian - We're at Phase I product. Phase II is more appealing cosmetically, interior and exterior.

Q- Doug S - Worked with MTA on... Visual design is important but shouldn't be overemphasized. The actual design difference is the traffic control interaction and what happens at the station/stop. Half the delay in MTA study was at the stop. Getting people on and off the bus quickly via docking and passenger entry control speeds boarding and deboarding. Looking for standard door spacing, on a modular basis, to facilitate station/stop design. Try to think of bus and stop design in concert.

Q Mark from Lane Transit -- As a transit operator, would prefer using a domestic supplier over a foreign supplier. But there's no incentive in the system to take the risk of developing with a domestic manufacturer. Needs incentive funding and guides/rules for what's to be used. Maybe tax incentive can help defray R&D risk. Stable funding is critical in making decisions, for procuring agencies and manufacturers. Innovation and 'low-bid' are incompatible. A negotiated bid process that takes pricing out of commodity model is needed.

Back to Brian

Q - Allan Hoffman - Just completed study for transit. Speed counted, but perception of

beating traffic congestion and personal identification with the system's image carried weight. People identified with transit image because of 1) transparency, 2) 'small and cute', and 3) 'sleek and modern.' People responded to original Civis style. If they identify with the image, other considerations may assume less priority. (Will provide copies to those who supply business contact info)

Response: Transit agencies didn't buy those styles in the past.

Response (MTA) - People DO care about the appearance of the bus. Wider doors. But clean fuel buses are critical in our needs. An RFP for a CNG articulated bus probably wouldn't get a response. Increased capacity ties in to increased speed. Articulated buses needed, with clean-fuel/propulsion.

Edward Thomas - Visual preference survey is available on the table in the foyer.

Ms. Sanchez: Another feature we want is a quieter bus, as well as a nicer looking one. Residents don't want to hear buses passing.

Response: Denver fleet found that absolute noise level and relative noise levels are both important. Full electric capability can allow use in most sensitive areas.

Response: Calstart could begin to work with manufacturers to see what could be done with new designs, sharing risks, funding. Maybe a meeting set up with companies through an entity like Calstart could facilitate?

Brian - Companies are competitive, and regulations against collusion impede manufacturers discussing directly. A forum provides one approach, going directly to manufacturers directly may be preferred.

Fred Silver - Different manufacturers and buyers have such different needs in re: a better looking bus. How do we get some consensus?

Response - if a manufacturer goes to a community and invests to develop a product, then has to go to bid, it's a disincentive.

Jim Garza - BTA in San Jose - The transit agencies need to take more responsibility for making product decisions, how we market to the customer/riders.

Cliff - The innovations everyone seems to like in Europe are done in partnership with manufacturers and agencies.

Brian - each side needs to define what they want.

Response - ebus - for a 20-bus order, \$700K, we can provide aesthetic, clean, quiet buses and that's workable. I don't think one design is going to win the BRT Market. And we probably would not spec a design that we didn't know would sell.

Response - Different designs for different needs can be supported in this market, FTA can help by championing tax incentives to support manufacturers. Grapefruit growers in Florida spend more on marketing than the bus industry on R&D. FTA can look at more creative ways of promoting R&D, because industry can do that work if the incentive is there.

Mark - RTC Las Vegas - Heard this same conversation last year. Went to manufacturers to propose their project, and were turned down because of economics, so they went to a foreign supplier. Don't need a lot of standards: door width, yes. Aesthetics, probably no.

Response - Airbus was good for Boeing, Nokia good for Motorola. Irisbus may be good for our industry. There's a lot to be learned from there, despite protectionist legislation.

Response - Why can't bus industry work more closely with truck industry to develop hybrid type vehicle.

Response - One-piece windshield has been an impediment to some designs from the agency perspective. Resistance from transit side based on economics has been an obstacle.

Response - Innovation does not flourish when you must struggle to maintain market share in a limited market.

Brian - Two Phase approach allows a way to address that.

Response - BRT is more than a vehicle, it's a transportation concept. It will require more time to deploy.

Response - It's not productive to decide who made the call in the past, we need to determine how to go forward from this point. Let's talk about that.

Response - There's one standard in European buses that should be adopted here is maximum allowable decibel levels. It is a source of major community resistance.

Response - Again on looking forward, innovation of image is not that big. Relatively inexpensive changes could make a big difference. Almost all the European buses and the design winners have covered wheels. Makes it look less like a refrigerator on wheels. Transparency, visual appeal has a lot of impact.

Brian - I think we can get there in our vehicles. Our needs are a little bit different than Europe.

Edward Thomas - We sort of developed the project concept in silos. Project development is the last stage. There are disconnects and we're perpetuating it. Somehow we need to connect the dots and work out how we accomplish changing this.

Fred Silver - One thing is don't put advertising on your BRT.

Mr. Grimes - We need to keep in mind the issue of who we're designing BRT for. If we provide the dedicated lanes, infrastructure, network, the vehicles will take care of themselves. I think the look is not quite as important if we can provide the service.

Brian - US Mfgs are concerned about the procurement process. They're looking for incentives and shared risk. They're looking for standards. They're looking for stable funding, and joint partnerships, maybe some regulatory relief.

Session Three: Proactive Vehicle Development

Leslie Rogers - FTA

Proactive Vehicle Deployment

Region IX includes Nevada, Calif, Hawaii and pacific islands. San Diego, BRT Honolulu, Phoenix, Las Vegas and others are through this office.

BRT means different things to different communities.

The procurement process:

Las Vegas - Buy America waiver was issued prior or absent formal solicitation document. PB did a market analysis, including vehicle characteristics: articulated, wider doors, auto-guide, normal ops in mixed traffic, advanced propulsion. Only one mfg, Irisbus, could supply.

Similar process was conducted internally at Lane Transit.

Since mid 90's govt procurement process allows local decisions on procurement, seeking competitive process. Seeks to allow community to get vehicle they want.

FTA procedures allow progress payments, and will allow advance payments with prior FTA concurrence.

Where possible, FTA will encourage partnering between communities.

Under piggybacking, one grantee will include an option that includes an assignment clause, allowing for another party to join.

Lifecycle: BRT should fall between 12 and 20 years.

Inclusion of liquidated damages, and tax incentives are being addressed.

Joe Calabrese

Procurement barriers... Vehicle deployment is critical, must get funding and let other issues work themselves out.

Is putting new 40' low floor vehicles into service in Cleveland. New Starts process is a hindrance, has delayed implementation and deployment.

Vehicle testing criteria still to be determined.

Image: how do you assign points or dollar value for image? Consumer interest is important, but FTA doesn't allow pricing assignment.

Wheelchair restraints, accessibility issues are important.

Flexibility on joint/shared procurement needed.

Is seeking partners on a procurement, to boost 20 bus order to 50.

Back to Leslie

John Andrews - Working relationship with NJ Transit dates to early 80s, 1244 units over five years. Also entered into agreement for CNG cruisers, and now diesel-hybrid vehicles (with ISE).

M. Milan of NJ Transit was supportive of CNG, hybrid projects, brought in sub suppliers and OEMs. Helped bring suppliers together to pre-production meetings, encouraged collaboration and buy-in. Set up program of progress payments at delivery of vehicle for each step of construction/completion.

Putting engineering staffs together was important, as no one knew all aspects, encouraged collaboration.

Flexibility after the contract is awarded also supported successful collaboration.

Competitive negotiation is an effective strategy.

Back to Leslie

Susan Williams - Ballard Power Systems
With electric drivetrain group of Ballard.

Sharing risk is critical: advanced drivetrain development involves significant investment, and low bid approach does not support success. Competitive negotiation with communities, allowing for amortization of R&D costs, is important.

What do riders want? They don't want noise, large vehicle (perceived), advertising, 'bus' image. Hybrid and electric drivetrains can be part.

Lakis DaSilva -- Detroit Diesel

Procurement from vendor side... Vendors are often asked for recommendations, and discuss engineering/ technical/diagnostic aspects, as well as training for maintenance and repair. Trained 250 mechanics on LACMTA CNG project. Business specs for training should be part of agreement.

Vendors benefit from feedback, helps improve product.

Back to Leslie

Jerry Trotter - APTA

Accessibility

In BRT, 'R' is for rapid. North America has 'unique' leaning board, back-in capability for securing. In Canada, there are two approaches: leaning board, and tie-down.

If rear-facing position is only provided for disabled riders, that was regarded as negative. If it is in a mixed forward/backward seating, it is deemed more acceptable.

Questions:

Margaret - You raised issue of piggybacking. And there is an issue FTA should address: the latest worksheet makes it virtually impossible for us to piggyback on other properties. Only minor changes are allowed to specs, primarily exterior and interior trim type changes.

Also, on 'useful life', if properties such as MTA are willing to go with new products, can we get a pullback to a shorter life as an incentive for taking the risk?

Leslie: MTA has forwarded such a request for its advanced transit vehicle. It's the first such proposal FTA has received.

Q: About clean diesels, in light of the costs associated with alt fuel diesels, are the diesel engine manufacturers exploring clean diesel.

Response: Yes, we are testing clean diesel, and are waiting for CARB rulings. Also evaluating NOX.

Q: Should BRT be classified like LRT re: ADA requirements? Also, FTA needs to reevaluate partnering innovation allowances. Perhaps staged procurement allows for more flexibility, with local agencies involved in Phase II and III.

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Q: With BRT in neighborhoods, noise is a problem, and with high exhaust stacks that exacerbates the issue.

Q: How can we encourage use of programmatic tools - progress payments, advance payments - by properties in securing/procurement considerations.

Response - Perhaps involving local FTA offices in discussions can spread information and encourage collaborative innovation.

Q: Companies involved with developing innovative technology are not eligible for progress payments until after Altoona testing.

Response: Local share can be advanced prior to testing, perhaps 20%.

Q: Is there a tie between standardization and procurement, setting a price for a 'standard' bus, short-circuiting the procurement process?

Response - There is an effort on the Hill to allow the standard '40' diesel bus on the GSA procurement list. OMB has some concerns over the move.

Response -- There have been several attempts to get these buses on the GSA list, some of which were fought by smaller manufacturers. There is resistance at the upper levels of the GSA as well, because of concerns of staffing in re: dealing with a number of new vendors.

Joe C - APTA has been getting more involved (see website) in these issues. Also, a number of states have statewide procurement processes that may not conform to fed guidelines. Appeal to industry as a whole, we need to maintain standards ourselves.

Q: Is there a way to encourage industry to bring products from overseas that have been tested and proven, and partner with foreign companies to do that?

Session Four: Developing and Delivering the BRT Message to Key Audiences

Martha Welborne, Moderator

Elaine Dezinski, FTA

We don't have a fundamental agreement on the marketing of BRT.

To start with themes heard yesterday

Definition is needed, agreement is not establish
It's difficult to market without agreement
It may not be one-size fits all, we may need a variety.

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Limiting may b

Image is key, and we have an opportunity with BRT
People want something better and different and that's what we can offer.

We spoke about the cost of a BRT vehicle, but don't know what kind of vehicle that is.
We need to be careful in our marketing approach.
If what we're offering is a cost-effective alternative to LRT, we need to be careful. How
is it better than LRT, if the price approaches LRT?

How can we in FTA work with you, and with Congress to get out the word.

Efforts at FTA to capture good news:

Admin Dorn created strategic communications team to market the concept to
stakeholders

Our responsibility to assemble a cohesive strategy

Brought together communicators at top transit agencies in aftermath of 9/11

Communicators task force addressed those issues and has moved on to marketing
activities and concepts

Task force is also helping generate marketing materials, using local success stories to
disseminate in media

My role is to take charge of legislative outreach, and particularly in the reauthorization
effort.

In the next few months, we will be reaching out on the hill and in the media, and we hope
to get ideas out of this conference.

Back to Martha.

A few comments, then we'll have a panel.

Marketing or selling transit is not easy, and BRT is challenging because it's not
understood.

It's a brand new idea. Marketing, educating and selling are different concepts.

Educating legislators is important, as is local marketing. Who are we marketing to, what
are the tools and what are we marketing?

Is there an approach needed, like creating a vehicle.

Six years ago I got a grant to go to Curitiba to see the new mode of transit, and see if it
made sense for Los Angeles. So I undertook a visual study, using drawings and ideas,
countless slide shows, and then eventually a video, actually several.

There's a brochure in your packet which will give you some ideas of what we were

developing.

It was eye opening to see what they were doing, and I will show you a clip from this video, a computer simulation.

A picture is sometimes worth a thousand words, so I'm sure you're using drawings

John Powell
Gale Charles, MARTA
Steve Marano, METRO Magazine

METRO Magazine
Article on BRT outlines various BRT projects around the country.
Is a supporter of BRT
Building a BRT resource website, with archive of articles, forum, research info.
Encourage industry contributions

John Powell

We spent a lot of time discussing the vehicle. Many are "toasters on four wheels". There is nothing that captures the public imagination like seeing these vehicles.

BRT Vehicles have great opportunity. They are unique and futuristic. It is the uniqueness of the vehicle that has the draw.

Electric and HE buses are new and exciting, and BRT is as well. They're almost LRT on tires, with new propulsion systems, and that's important.

Back to Martha

Gale...

With MARTA, we're looking at BRT internally and externally, and we want to be on the same page.

Externally, meeting with stakeholders is important.

Nationally, we should all be on the same page, so we can all promote it.

We need to educate our public and political leaders, and enlist the stakeholders.

Different areas will have different needs, and the marketing approach needs to be reflected.

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Kurt Orange County

OCTA is pursuing 7 city BRT project, following the Rapid Bus model, focusing on Harbor Blvd.

Pre-marketing - hired consultant to develop bare bones BRT plan, 1 or 2 corridors.

Key aspect was educating cities on signal priority. Priority is different from pre-emption, more complex, and the cities needed to be educated, or you could lose key BRT piece.

BRT not be conveyed as "train on tires". We don't see BRT competing with our LRT, but as complementary. Before BRT, multiple bus service was seen as complement to LRT. BRT allowed us to extend the coverage, and that should be considered: BRT to extend reach of LRT.

We also are looking at it as a feeder for MetroLink rail commuting system.

Cliff Henke - Brian was on to something yesterday. I think the idea of "packages of definitions" is a good idea, and we need to define the BRT family. Fed can create a matrix of criteria or descriptions for each family member.

Educating stakeholders great idea. The Fed govt can do a lot more outreach, and sponsor trips to expose more officials to the BRT systems around the world. Not only do they see the systems, they see how the partnerships are set up, and how marketing approach is derived. FTA can help in this way.

John Bosesel - There are different levels, educating/selling the concept to Congress, to local agencies, to end users. Thinking about Congress, we're in conversations with staff on the Hill, and there's need for better education, much work to be done. We need to identify champions of BRT, and we'd like your ideas. Please contact me or Fred Silver.
Martha: who's responsible for educating congress?

John: Staff is to a certain point, but only to the extent they know. Industry must step up, and communities need to speak up. Within this group, there's an interesting group of stakeholders...

Martha: I think there's not TOO much time, so how can we push this forward.

Response from Lane Transit:

Education was the first and foremost task, and we see the value of the videos. FTA could step up, as video has been one of the most valuable tools. LRT has been shown to work, and BRT needs to be sold. Video is so valuable, and we used photos in a video which was realistic. It's got to apply everywhere, so it can't be just urban/city. It's got to be generic enough that community stake holders can identify.

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Also need a common assembly point of printed literature from different local campaigns to model from.

Martha: It seems like it would be easy to assemble the printed material, and a video

Edward Thomas. ---U of So. Florida, Berkeley Institute are working on these. On marketing, we're in this building now, but we're in the process of education, and that involves facts. Community residents want to know about technology AND impact of signal interaction and other technology. Now we've got to get into the selling piece, how it moves more, and make that part of the engineering process. We need to get the facts to get out to the public.

Response: There should be a caution about reauthorization: don't set up a competition between BRT and other modes. We need to get the most money, then divvy it up where it's most effective.

Marketing is great, but deployment is so important. We've got to get it on the street, as in LA and other places.

UC Berkeley: Marketing requires success story. Curitiba is a success, but it's not US. More facts from local programs are needed for marketing.

UC Berkeley is working with U of So. Florida to develop planning and evaluation tools for BRT. FTA and CALTRANS are backing simulator - insert your data - and it will show outcome, impact on traffic, and will create animation.

C. Thompson, Atlanta COC - Atlanta has traffic congestion, and we're seeking solutions to preserve market competitiveness. Creating buzz is important. Market research to design the product is needed: focus groups, research to discover what users want, their priorities. Federal process doesn't encourage that part of process. Market research will help design a product that will sell.

Chuck Morris - We're finding that there is an opportunity to raise the bar, and sell the concept of mobility. We're going to have to enlist highway, traffic and internal customers, and reach out to communities and riders to develop a plan that allows the transit community a chance to take a leadership role. How do we do that in the professional community and the local community.

Irving Chambers - FTA did commission research into bus stop design, which is available. How comfortable are you waiting for the bus. Do you want to be seen and see through the bus? The report also includes many other preferences.

Response: Market research needs to go further than that, beyond visual characteristics but into performance characteristics.

Martha - Maybe we're in a stage to go beyond. When we started, people didn't understand the concept, so we went to the video route. People are now more aware, and have accepted it. Maybe we can go into that higher-level marketing approach.

Response: Part of what is being said involves all the stakeholders. Vehicle manufacturers need to be a lot more involved with customers at transit agencies. Most BRTs are coming from bus manufacturers, there needs to be more dialogue.

Nat'l BRT Institute - Institute is new, and we agree that buzz is necessary. Congress needs to be educated. Railvolution was successful, and we don't have a buzz maker like that. Congress is interested in clean air, cost-effective mass transit. Riders are interested in something else: efficient, comfortable, affordable, safe. Similar but not identical messages. Domestic success stories are essential.

Response: A limited number of cities have a need for heavy and light rail, but every city has traffic systems and buses. We have married transit and traffic engineers, and we have 400 buses. Many people think buses are in the way, so if you can keep the buses moving as in BRT, it's a way to sell the concept. Also, transit dollars are available for bus projects. Highway dollars have dried up, but there are dollars for traffic mitigation. Our automated traffic system keeps traffic moving, cutting congestion and smog. By adding transponders to buses we got an additional benefit, without slowing the cars. FTA might want to work with Highways to support traffic interaction in funding grants. Focusing on the vehicle may not be the strongest sales approach to some stakeholders

Rob McKenna - Politicians perspective. Marketing, education and selling is to different audiences. Has to be customer focused. The public, policy makers, transit agencies, etc. Elected officials are making allocation decisions as is Congress. In reauthorization, should not turn into dogfight between modes. Still to signal BRT is significant is to get it recognized in funding criteria, in new starts or some other concept where it can fit. We must BRT more competitive for fed funding. Railvolution was an effective campaign for rail. We need domestic success stories, closer than Curitiba, where elected officials can see the growing market share and acceptance.

E. Thomas - FY 02 appropriations have \$58 million of BRT new start earmarks, \$38 million BRT bus projects. This came from community, but we need more organization.

Response: Tours in France have left many visitors with impression that the near LRT version IS BRT. Dedicated guideways, articulated vehicles. There is a danger in limiting the perception.

Margaret MTA - The challenge to FTA and APTA is gather all the info - videos, brochures, etc - and help assemble professional presentations for national and state lawmakers and for local/regional audiences. State legislators create regulations on length and other specifications. Those may need to be changed if we're going to be open to advanced, innovative approaches for longer vehicles, etc. We need to hit Congress on

money, and state/local governments on allowed specs.

Response from Lane Transit: We've done market research, and people wanted higher frequency and lower transit times. Time on board, travel time to stops, parking availability and congestion as well. Models don't address changing image. Engineers have a LRT factor for predicting ridership, we need to get a factor for BRT or address this in some other way.

Ron: State law varies from state to state re: running specs, liability. It's a serious issue that manufacturers have to consider.

Tom Rubin: Market segmentation has not been addressed. We need to break down market data for riders and for everyone else. Some people will never accept bus, only want rail. Ridership in LA is based on \$10K household income, different from other cities. Decision makers are trying to deal with getting higher earners out of their cars. Reality is most people will never take transit, but we still have to make transit appear attractive to them for transit to succeed. Attracting the general populace is critical, but reality for riders is that a \$1 million BRT reps 2 regular buses not bought.

Ron Fisher, FTA - BRT vs LRT. Engineers have bias factors for LRT but not BRT, and FTA doesn't allow this. FTA experience of BRT is that it does as well generally as LRT in performance if other factors are equalized: stations, fare collection, etc. We support good bus systems.

John Boesel - Agrees BRT pot for funding is a reality. BRT, LRT and other modes are all tools. How do we then try to grow the pie?

Joe Calabrese - Our BRT is we hope coming out of New Starts. Other BRT projects are coming out of general funding: those are moving forward because New Starts is moving slowly. I think we get the pot bigger: if New Starts can only be accessed by top 30 markets for rail, or if it can be accessed for BRT for more communities.

Rob: We need to increase the pot, and the trend has been to. We need to make it clear to Congress there communities can get hi-volume transit without being Top 30, more lawmakers will support it. Increased marketshare for transit will attract more funding.

Martha: We need to see how we can work together, to get the word out, to grow the funding.

Session Five: Streamlining Project Development

Mark Pangborn, Lane Transit

Last Session will be on BRT in the community. There will be a wide range of subjects.

Nothing happens without money.

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Ron Fisher, FTA

New Starts program history and future.

The program is for fixed guideways: busways, rail heads, people movers. There is a problem with New Starts for some BRT. Congress recognized need that many communities could not afford, and demand has grown. There are \$20 billion projects under consideration. 40 projects in consideration, 6 over a billion dollar in prelim, 2 in final design.

It's a popular program, but it's hard to get money now. Congress put rules: requires alternatives analysis, FTA rating. Requirements under TEA21 are more rigorous.

Requirement for analysis has been around for 20 years, Congress has been supportive of find cost-effective alternatives.

No mention of BRT solution, specifically.

The political aspect is there is great interest in how projects are rated.

The Admin is looking for cost-effective projects, and historically we have done well with BRT. We don't determine the alternatives: that's local. We are interested in consideration of all alternatives generated by the community.

The requirement for the analysis is an opportunity.

The future:

Amount of funding – get BRT funding

Eligibility – get BRT included

Criteria – Get a new pot for new projects, and get BRT included

There are many challenges in getting a dedicated pot and growing the pot.

Mark ----- We used bus money in Eugene.

Stef Viggiano
David Mieger
Paul Steffens
Katrina H
John – AC Transit

Stef V – We first started talking BRT in '95, as a concept. Spent 3 years educating

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community. Project development started in '98 and we're looking at deployment in '04. Seems long, but turns out not to be. Focus on period before final design okay to speed up process. Explore interaction, traffic control, geometrics, community support and involvement to gain political support before proceeding toward funding and vehicle procurement.

BRT is really a local issue, but Fed can play a big role.

Centralization of info could help on engineering, tech resources would be helpful.

We took our traffic engineers to visit their peers in cities where the traffic interaction system was in use, on an FTA scan tour.

Much of the community wondered what it was, and we didn't have many examples. Looking at other success stories helps validate concept to community. Document successes as they occur, share with community. FTA could provide access resource.

We are considering New Start for upcoming projects. Maybe part of New Start pot could be for projects of common BRT scope. There should be lesser requirements for smaller projects, less rigorous analysis.

David Mieger –

Thanks to Eugene for use of their early graphics...
Initial enthusiasm for BRT came at bad time, coinciding with LRT problems in Hollywood. Voters said no to more taxes for subways, look at surface transit.

Decision was made to lift elements of BRT that didn't require major actions to institute quick-run up project, and hold on to funding for previous rail funding. Results include BRT Rapid projects, which are dropping out of Fed New Starts funding, going to bus funds.

In SF Valley, EIR has been completed on BRT proj from end of Redline out to Warner Center on abandoned rail right of way. Could have been New Start/fixed guideway, but was funded out of other funds.

Expanding Wilshire Rapid was to include dedicated lane. Challenge was to preserve successful service while expanding in new mode. LA DOT's job was to fit BRT without disrupting traffic. Prospect of dedicated lane encountered strong resistance from business and community, even though Rapid bus was popular.

Incremental approach worked here. And emphasizing bus aspect was received well.

Proposed LA to Santa Monica project would get two BRT lines (30 miles) for cost of 2 miles of subway.

Resurfacing, acquiring vehicles and expanding maintenance will be required, as well as agreements with cities along the line for maintaining the stops and routes. Still doesn't fall under New Starts.

Mark...

Paul Steffens from Honolulu

Thanks to FTA for forming BRT Consortium, and MTA for conference.

The basic bus system hasn't been changed in 30 years, except for expansion. Trans2K is aggressive program to revamp, includes BRT.

Went to communities to determine traffic patterns, commuter needs, commuter wants/desires.

After drawing up proposals, went back to community for add'l feedback. Made changes, then went back to get approval/buy-in.

Don't want rail

Don't want overhead power

Do something now

Led to BRT, four trans centers, inner city and outlying routes.

Problems arose in appropriating surface lanes for buses. Researching with customers showed it would not have the predicted negative impact on business.

In outlying areas, resistance was countered with education on hub-spoke system.

Community process works.

Other obstacles. State DOT accepted limitations on highways, became supportive. New head of DOT wasn't as supportive. Other local politicians likewise. Education is possibly bringing them around.

Centralized sourcing of information from other communities and research entities would be helpful.

Mark

Katrina Heineking, Charlotte, NC

Charlotte has county funds from sales tax for transit.

Five corridors id'd. One is LRT, projected for 2005 service. Four other corridors must compete with success of LRT to get the best alternative, as funding is finite. Decisions

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anticipated by end of summer.

Has dedicated busway, but BRT is not understood clearly in community. Regular buses use the busway, just same as buses in mixed traffic. Didn't capture public interest or generate increased ridership.

Lack of existing "Cadillac" domestic project is an obstacle to getting local buy-in.

Problem with busway was encountered with rare snowstorm which obstructed busway.

[INSERT FINAL COMMENTS, L. WNUK NOTES]

Jon Twichell

100,000 people a day on 5 trunk lines - Not so interested in spending \$1M for image

15 miles 25 stops Sao Pablo Operating costs note increasing ridership by 25% it's a big deal for their constituency.

Internally, just hired a traffic engineer to help plan projects. Also internal marketing committee "working group all down to drivers". Shifted \$1.3M into traffic signalization for priority. Writing the s/w for this even. Made this commitment because they spend \$250,000 a year to put another bus out their you need to make the investment in signalization to get the service. Important for the FTA to realize, the community needs the signal money to help the bus service when

Mark

Two tracks a community can use for BRT
Start quickly but not a full blown system
Or something with exclusive ROW

Around that are money issues

Signal priority and you need to form partnerships traffic departments and you may have to pay for it

You also need an internal component to sell it you your staff even the bus drivers

On the political end

Even though it works, you still run into problems like bring me the customers but don't take my park lot

How you choose what funding source impacts what you do

Edward Thomas Wrap-up

BRT was coined by Stephano from Eugene Oregon

We'll put up a website for you to critique the recording of your remarks.

Please go into the notes and, picking your priorities, select two “actions” per person. We’ll incorporate this in the Workshop Report.

Snoble started talking about mobility which is what we are all about. BRT is an option. We want to avoid the bus versus rail issue.

Themes

Incremental development, phasing, staging ... key is flexibility in terms of testing, getting the message out, the implementation process eg start w/Metro Rapid services and grow from there. R. McKenna suggested the concept of “higher capacity transit” bigger vehicles, greater access, signal priority, etc. and that backs this up.

Activity Side Themes

We really are serious about the Action Plan and we’re short on time. We will try to reach closure on testing first by a meeting at the APTA Conference in May.

Regarding testing we need data (all sources, manufacturers/government/private). For example, Stage I vehicles are probably current vehicles.

Partnerships and risk - public/private to introduce the BRT products there is a challenge and “timing is everything” eg Cleveland project to inaugurate the service in 2006, they need issue an RFP in June of this year. I.e. it looks like it takes 4 years.

Buy America is an issue.

Time problem also because FTA waivers are going to be limited not 15 but maybe up to 3. So we have a real urgent issue.

On vehicle deployment, we need to reform the procurement process. You need to define the end point, before you can back up to improve the process to assure that you get there. Somehow we need the people who plan the projects and the people that supply the issues we need to get them together.

Marketing is really marketing (buzz), education and selling.

Planning and development – we have a pipeline of projects and funding program that works. And we are attracting new ridership so we should be proud of this. But project modelling, integration, criteria to get at the various families of BRT.