

APTA Streetcar Subcommittee Meeting Minutes

The Aladdin Holiday Inn Hotel
1215 Wyandotte Street
Kansas City, MO 64105

Thursday April 7, 2016

*Paul Grether, Chair
Timothy Borchers, Vice Chair
James Schantz, Secretary*

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Welcome & Introductions

Paul Grether (Chair)

Chairman Paul Grether convened the meeting at 9:07 am. In attendance were approximately 40 participants, including representatives of FTA region 3. Paul Grether expressed the subcommittee's thanks to Herzog Transit Services, Inc. for sponsoring breakfast and lunch on the day of the meeting.

Welcome from our host Kansas City Streetcar Authority

Tom Gerend (Ex. Dir.)

Tom Gerend stated that when planning a rail transit network the first step is the hardest. The goal of Kansas City's initial line (due to open on May 6) was to spur downtown development with the \$102 million investment for the 4.4 track miles now in place. The results are notable as \$1.6 billion in new development, comprising 94 private projects, is underway along the route. A north-south alignment was chosen so it could be the spine of a future expanded network. The "Smart City" concept is being implemented with digital kiosks at stops that will provide transit and area information. A free Wi-Fi zone has been established along the entire route.

Previous Meeting Minutes (November 2015 in Minneapolis, MN)

Jim Schantz

Minutes from the Minneapolis meeting had not been distributed, so action to approve them was deferred until the next meeting.

Updates and Presentations

1. Special Track Work Update

Bill Moorhead, PCI Tramco

Key points from Bill Moorhead's extensive presentation were:

- There is no authoritative resource governing special work – AREMA is the only central source
- There are no standards for embedded track, such as whether to use reinforcement (rebar) or not. It is up to local choice and can have significant impact on cost. Also there is no authoritative source for the number of concrete pours to use on embedded track
- Drainage is critical for embedded switches as long periods underwater can damage them
- Stray current suppression is important if track is being used for ground return and the suppression method used impacts the choice of special work
- Frogs and points come in many types
- Maintenance costs for turnouts are high with annual maintenance costs for a switch running the same as the costs for four miles of track
- Flange bearing frogs need maintenance – ramp length and condition are key factors. Beware cars with airbag suspension as that may suppress wheelset twist leading to derailments on flange bearing special work

- New technologies are emerging that allow easier repairs, such as replacing sections of damaged rail head with a Thermite weld process and new wheel profiles that reduce wear of both wheels and rail

2. APTA & CSC Memorandum

Charles Joseph

After many months of constructive exchanges between the Community Streetcar Coalition and the Subcommittee, the Memorandum of Cooperation and Mutual Benefit promoting mutual collaboration in the development of streetcar systems has been completed and executed. A copy is included with these minutes.

3. Streetcar website

Jim Schantz

The site at www.heritagetrolley.org and www.streetcarcommitte.org continues to be updated regularly with news and other resources that could be of use to groups planning or implementing modern or heritage streetcar systems. The latest draft of the off-wire status paper and the level boarding white paper are among recent postings in the Technical section.

4. 2016 APTA Rail Conference

Charles Joseph

There will likely be two sessions relating to streetcars at the Rail Conference (June 19-22 in Phoenix), likely both on Monday. One may cover off wire experience and the other featuring lessons learned and Q&A from a panel of four or five new systems, covering topics from design through start of service, and including FTA involvement. Candidates to participate include DC, Atlanta, and Kansas City. Attempts are being made to include a technical tour to see the Tucson modern streetcar line on Saturday.

5. Block Rail Experience

Luke Olsson (HDR), Jason Waldron (KC) and Andy Auxier (Stacey and Witbeck) Block rail is rolled in the US so is Buy America compliant and has been selected by Dallas and Kansas City for embedded track use. Key points from the presentation include:

- Arcelor Mittal is the only US manufacturer and supplies rail at varying hardness with 60 to 90 day lead time
- Standard rail length is only 39 feet, meaning more welds but easier trucking
- Other cities are showing interest in considering block rail use
- Only alternative in Kansas City would have been T rail which would have required a deeper slab
- The protected flange way on the block rail was considered desirable in KC to avoid deterioration of formed concrete flange ways
- The narrower flange way is also safer for cyclists and other narrow tired vehicles
- A rubber boot is available to fit block rail and has been used to reduce stray current
- Many utilities were being relocated in downtown KC so the shallower slab for block rail reduced relocation costs. Slab depth was kept to 6 inches over utilities and 12 inches elsewhere
- KC has relatively few turnouts so the costly block-rail to T-rail transition joints (\$13,000 per pair) were not a major expense item
- Slab depth was kept to 4.5 inches on bridges with block rail, reducing the cost and weight of putting track on a bridge
- Unreinforced concrete was used throughout the KC line
- Block rail can be either Thermite welded or flash butt welded
- Final gauge and level checks need to be done immediately before pouring concrete to avoid expansion or shrinking
- Track drains do not have holes cut in the rail groove out of concern for weakening the rail
- Pre-curved rails below 400 foot radius need to be roller bent to avoid twisting
- Dallas laid tangent rail to 4' 8" and curves to 4' 7 ¾" to allow using the DART light rail wheel profile and back to back spacing (Dallas streetcars are stored in a light rail facility)
- Block rail is more expensive than T or girder rail, but the shallower slab more than offsets the cost
- Expected life of the rail is not yet known

6. El Paso Streetcar

Jay Banasiak, Sun Metro, El Paso

Jay Banasiak, General Manager of Sun Metro, reviewed progress on the city's heritage streetcar project:

- The \$97 million project is being built with state and local money – no Federal
- The regional mobility authority is building the line
- Sun Metro will operate the line
- Utility relocation started in November 2015
- Granite Construction started work on the maintenance facility in December
- Rail laying will start in May or June using Austrian girder rail (as the project does not face Buy America restrictions)
- The project team is working closely with TxDOT and conforming to FTA processes as far as they can to enable pursuing Federal funding for phase 2
- Restoring the connection into Juarez, Mexico is also under study

7. Delta Mfg. and wheel truing

Tim Coble, Delta Mfg.

Delta makes a series of wheel truing machines that are of the scale appropriate for small streetcar operations. Key points are:

- KC has the above floor version, as does Seattle and Atlanta. A crane is used to lift an entire truck into the machine
- Cincinnati chose the in-floor model which will enable wheels to re-profiled while still on the car
- Proven CNC components are used throughout the machines.
- Prices are competitive, according to Delta, with the in floor model priced at \$775,000
- Many attendees were able to examine the KC above floor model during the technical tour

8. DC Streetcar

Tim Borchers

Tim Borchers, who helped lead the project over its final year, reported on the status of the new streetcar line:

- DC's long-delayed streetcar line opened on February 27, 2016
- Construction began 12 years ago
- Construction was essentially finished and cars running in testing two years ago, but the line was unable to pass safety certification working with the DC Fire Department as the State Safety Oversight
- The line is owned and operated by dDot and is 2.4 miles long
- dDOT owns six cars, , 3 from Inekon in the Czech Republic and 3 from United Streetcar of Oregon
- Cost to date is over \$200 million
- When Mayor Muriel Bowser assumed office a year ago (the fourth mayor to oversee the project) she hired an experienced manager to head dDot and set opening the streetcar as his top priority
- He then recruited competent and experienced people to help complete the project
- Lessons learned include:
 - Planning was sporadic and not thorough
 - Much track was laid when the streets were rebuilt, but location not adequately planned (too close to parked cars)
 - FTA did not get involved with construction since no federal money was used, but the project has to follow FTA safety guidelines
 - The Fire Department was chosen for oversight, but did not have experienced staff in the give-and-take usually involved in mitigating risks by using means equivalent to those specified in regulations

- dDot used consultants to handle all aspects of the project. In last year in house experienced staff was added so they now can properly oversee all consultants.
- Safety certification was completed in 10 months once these changes were implemented
- Safety Management Planning is a new requirement for FTA funded Small Starts projects as the FTA starts to exercise its new Congressionally mandated safety oversight functions

9, St Louis Delmar Loop Trolley

Chris Poehler

As Chris Poehler was unable to attend, Jim Graebner delivered his presentation describing the under-construction Delmar Loop Trolley project:

- Delmar Loop is an active evening entertainment area
- The line will serve two Metrolink light rail stations and is 2.2 miles long, some parts double track and some single
- Two cars will provide 20 minute headways
- Two ex-Melbourne W2 cars have been obtained from Seattle and two Gomaco Council Crest replica cars have been obtained from Portland
- Funding has come from a wide variety of sources
- Track construction began in February 2016 and wire installation will run from March until May
- T rail is being used and a bridge over Metrolink is being replaced
- An old auto dealership is being adapted to serve as the maintenance facility
- March 2017 is the current target for beginning of service
- Building the operations staff to complete all needed documentation and define roles between the nonprofit and the transit agency are key remaining tasks

9, Innotrans

The massive biennial transportation exhibition is being held again this year in Berlin from September 20 to 23. A number of subcommittee members have attended in the past and are planning to do so again this year. Information will be sent to members of the subcommittee.

10. Next Meeting

The next meeting of the subcommittee is planned to be held in Phoenix on Sunday, June 19, 2016 in conjunction with the APTA Rail Conference.

11. Adjournment

Paul Grether adjourned the meeting at 2:23 pm.