

Port of Pittsburgh Commission



Wireless Waterways
Services on the Wireless
Waterways

June 24, 2014

Mission

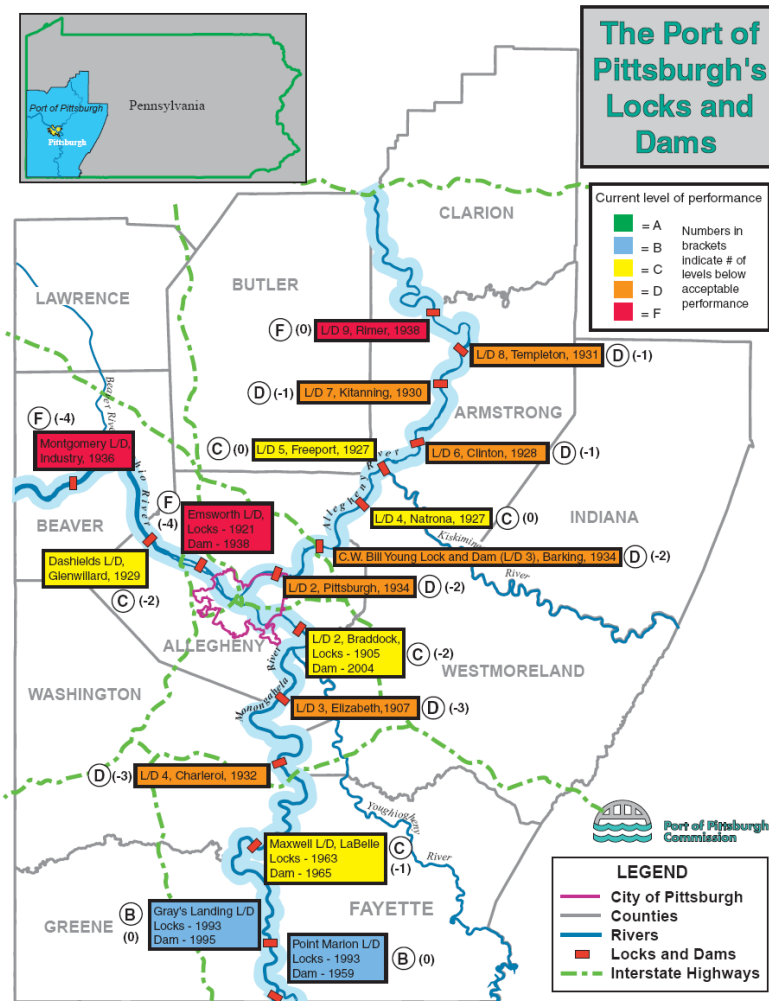
- **Promote:** The commercial use and development of the inland waterway transportation system and
- **Integrate:** That system into the economic, environmental, recreational and intermodal future of southwestern PA.

What We Do

- **Economic Development**
 - Transportation Assistance
 - River-Site Location Assistance
 - PPC Loans, bonds, grants
 - Grant management for 3rd Parties including Port Security, Marine Diesel Repowers
- **Technology Development**
- **Public Education - Lock and Dam Needs**

Does not own or operate facilities

Port of Pittsburgh Locks and Dams



Pittsburgh is 2nd Largest Inland Port in USA

What is the Wireless Waterways?



Wireless-Hybrid Broadband Systems

- Presently covering areas throughout 120 Miles of Pittsburgh 3 Rivers area
- Wireless-Wired Broadband Communications
- Cyber Security harden



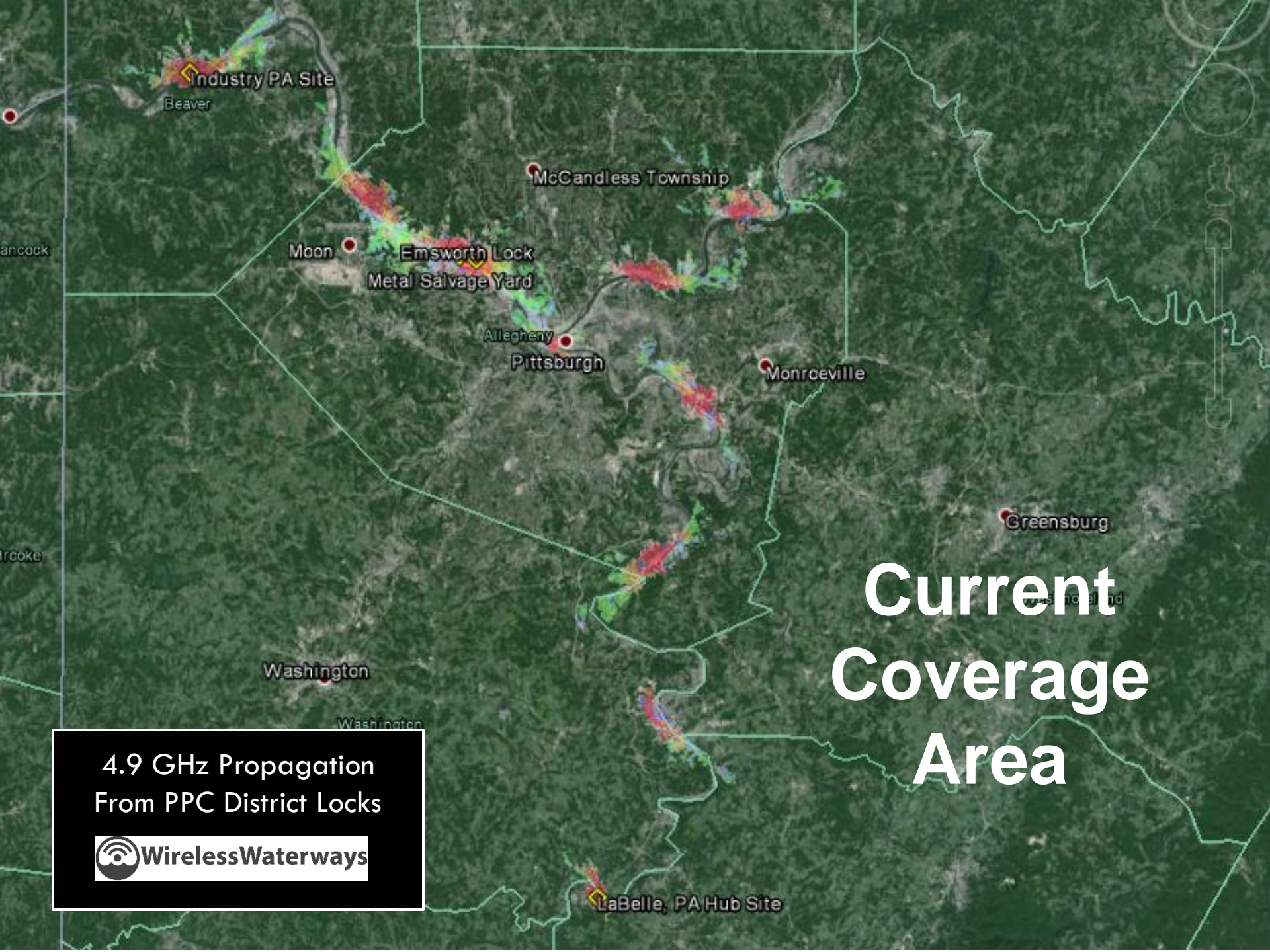
Maritime Situational Awareness Portal (MSAP)

- Track vessel info on Google Earth like display
- Website
- Environmental Info Overlays including weather, depth, water quality info



Wireless Waterway Interoperability Test Bed (WWITB)

- Living laboratory used to test hardware and software technologies and products in a river environment



Current Coverage Area

4.9 GHz Propagation
From PPC District Locks



High Speed 4.9GHz Multipoint Radio Array

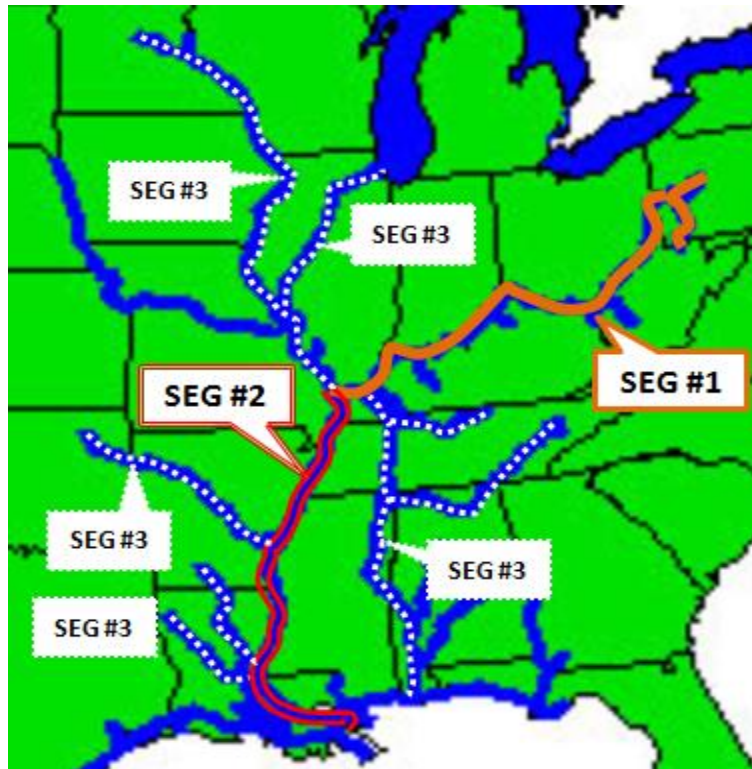
Up to 1Gbps Backbone Radio Link

Long-Range Metro Wi-Fi Radios



WirelessWaterways

Envisioned Wireless Waterways



Description	Coverage(mi)	Locks	Site Qty
Segment 1: PPC and Ohio River Only			
PPC Area - Allegheny, Monongahela, PA part of OH,	120	14	
Total PPC Area of Responsibility	120	14	29
Total Ohio River	950	21	137
Total Segment 1	1070	35	166
Segment 2: Lower Mississippi			
Total Segment 2	970	0	130
Total Segment 1 and Segement 2	970	35	296
Segment 3: Upper MS, IL and Chicago Rivers			
Upper Mississippi	29	29	29
Illinois River & Chicago River	9	9	9
Red River	5	5	5
Mc-Kerr Arkansas River Nav System	18	18	18
Ouachita and Black Rivers	4	4	4
Old River	1	1	1
Tennessee River	9	9	9
Tennessee-Tombigbee Waterway	10	10	10
Total Segment 3	85	85	85
Entire System --- Total Segement 1, 2 & 3	2,125	120	381

What's happening on the river?

Check out our events page to get the latest entertainment and event information.

[Read now!](#)



Commercial Waterway Users

See aggregated real-time river data from:

- U.S. Army Corps of Engineers
- U.S. Weather Service
- Port of Pittsburgh Commission
- Other commercial entities



[Take me there](#)

Recreational Waterway Users

Find everything you need to plan a great day on the river:

- Fishing and weather reports
- Dining and shopping guides
- Boating and outdoor activities
- Educational opportunities



[Take me there](#)

Vessel Locations

AIS Source

Filter Vessels ...

Select All Toggle

Refresh Rate: 30

- 307420000
- ALAN P HALL
- Amistad
- BUCK JOHNSON
- Bounty
- CG OSAGE
- D A GRIMM
- DANIEL T MARTIN
- DOTTIE D
- Dawn Treader
- EVANICK
- GEORGE W. JONES, III
- Gibson
- Indianapolis
- KIMBERLY JOHNSON
- LEE SYNNOTT
- MARY ELLEN JONES
- MOBILAN
- Maine
- Missouri
- Platypus
- Queen Anne's Revenge
- Riverquest
- SAFETY PLEDGE
- Santa Maria
- Serenity
- TAHOME
- TENNAS

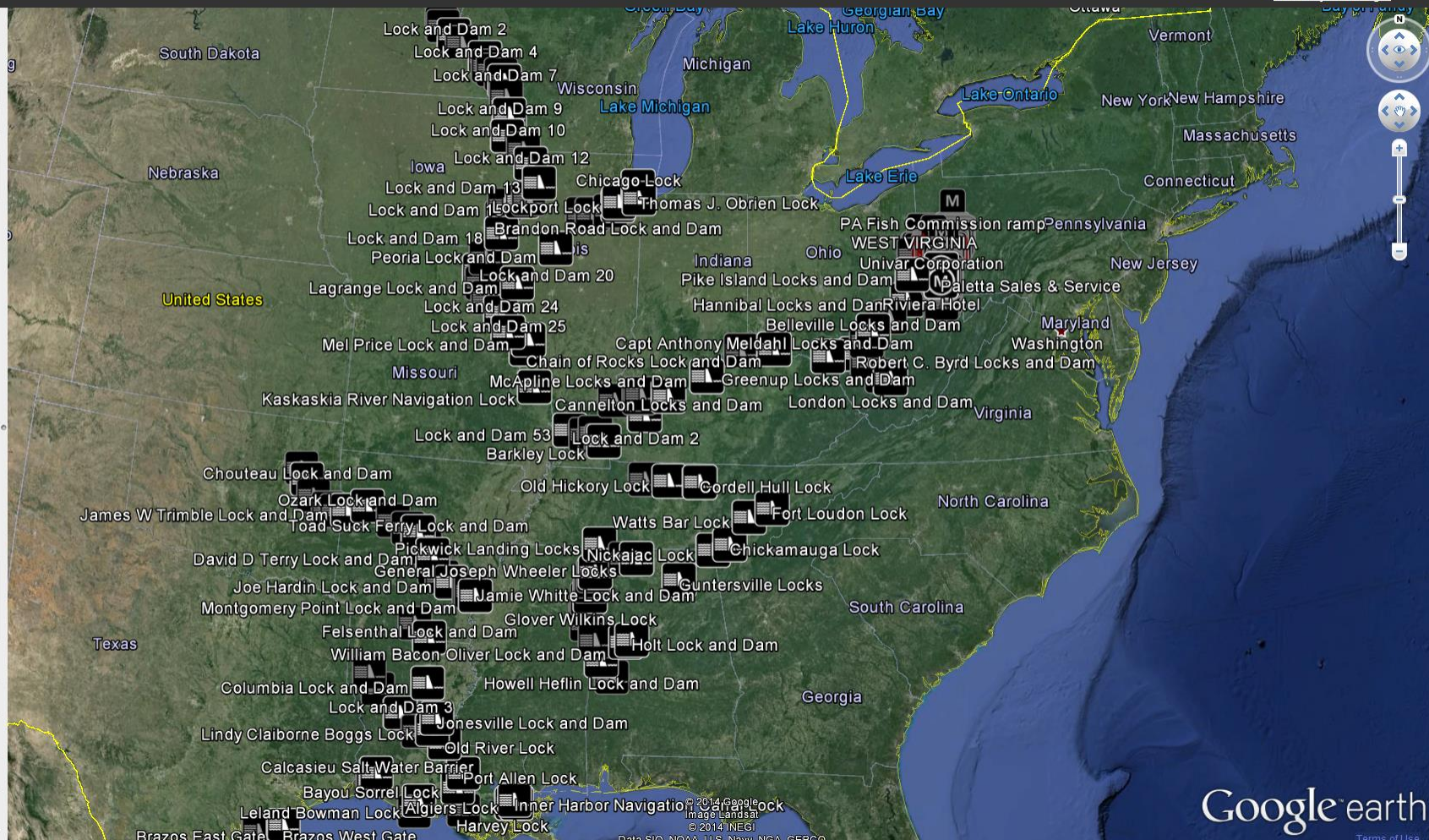
Vessel History

NOAA

USACE

River Objects

Google Earth



Current MSAP Features and Overlays:

- Integration of data from USACE, USCG, NOAA
 - Lock Info and Status
 - River Objects
 - Electronic Navigation Charts
 - Mile Markers
 - River Information
 - Weather information and overlays
 - Notice to Mariners integration
- Vessel Tracking and Identification using two methods
 - GPS (smart-device app)
 - AIS
- Historical vessel tracking including event replay
- Sensor Data

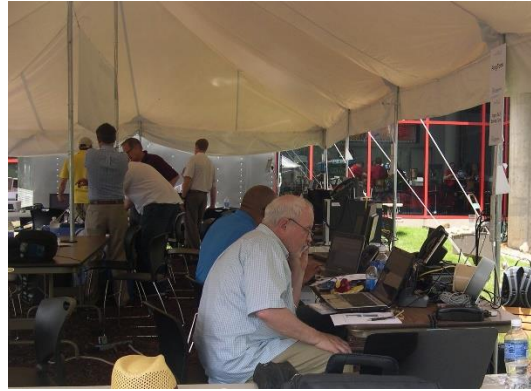


NOTE: PARTICIPATION IN THE INTEROPERABILITY TEST BED DOES NOT IMPLY ANY ENDORSEMENT OF PRODUCTS OR COMPANYS BY THE PORT OF PITTSBURGH COMMISSION.

June 24, 2014

Second Annual Test Bed Event

Purpose of Interoperability Test Bed



Only Test Bed of its kind in USA dedicated to river marine technologies

- ❑ Test application and system interoperability
- ❑ Conduct research and development of emerging technologies
- ❑ Accelerates fielding of cutting edge technology to Inland Waterways Community
- ❑ Provides an opportunity for technology developers to interact with river operators to test how their development efforts and ideas support or improve the River Transportation Industry

This Year's Participants



Participation in the Interoperability Test Bed does not imply any endorsement of products nor companies nor promotion nor services of vendors at this time by the Port of Pittsburgh Commission

What we demonstrated last week: Multi-company Cross-platform Solution Collaboration

- ❑ Advanced Wireless Communications Technologies
- ❑ Portable Cyber Security Encryptors
- ❑ Unmanned Surface Vessel collecting environmental data
- ❑ River Incident Response Management system
- ❑ Water Quality Sensors
- ❑ Intermodal Transportation Management systems
- ❑ Situational Awareness Portal and Collaboration Tools
- ❑ Maritime Social Media Technologies
- ❑ Testing of USACE technology under development.

Test Bed Participant Comments

Great week at the WWW-ITB 14.

We were able to meet all of our testing objectives, working with and meeting all of the participants. The ITB allowed us to complete testing in a live environment over several days which otherwise would have taken weeks if not months to complete. The value of the ITB cannot be understated for companies like ourselves.

Thanks again for including Welbeck Secure Solutions with the IP Technology Labs solution.

All the best.
Walt Rogers



I wanted thank you for taking the time to learn about our new water monitoring technology at the ITB event in Pittsburgh....even though the heat almost melted us all.

I hope we can collaborate in the future with our Carnegie Mellon developed sensor technology, and your knowledge of the local business environment.

Please do keep in touch.

Kindest Regards,
David F. Speer



QUESTIONS ?

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