

Why does 2010 feel like the dark ages for fare collection?

Fred Combs

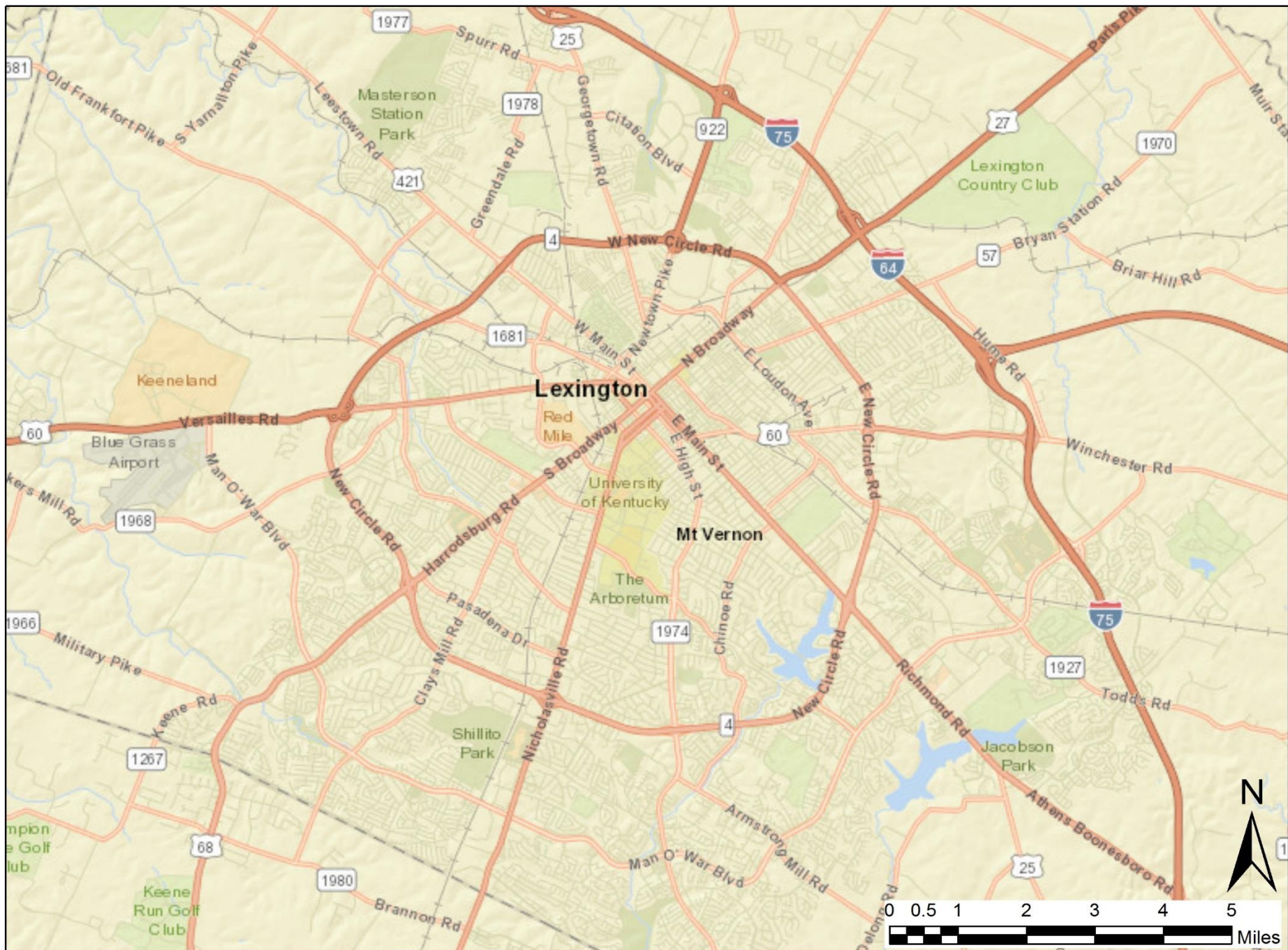
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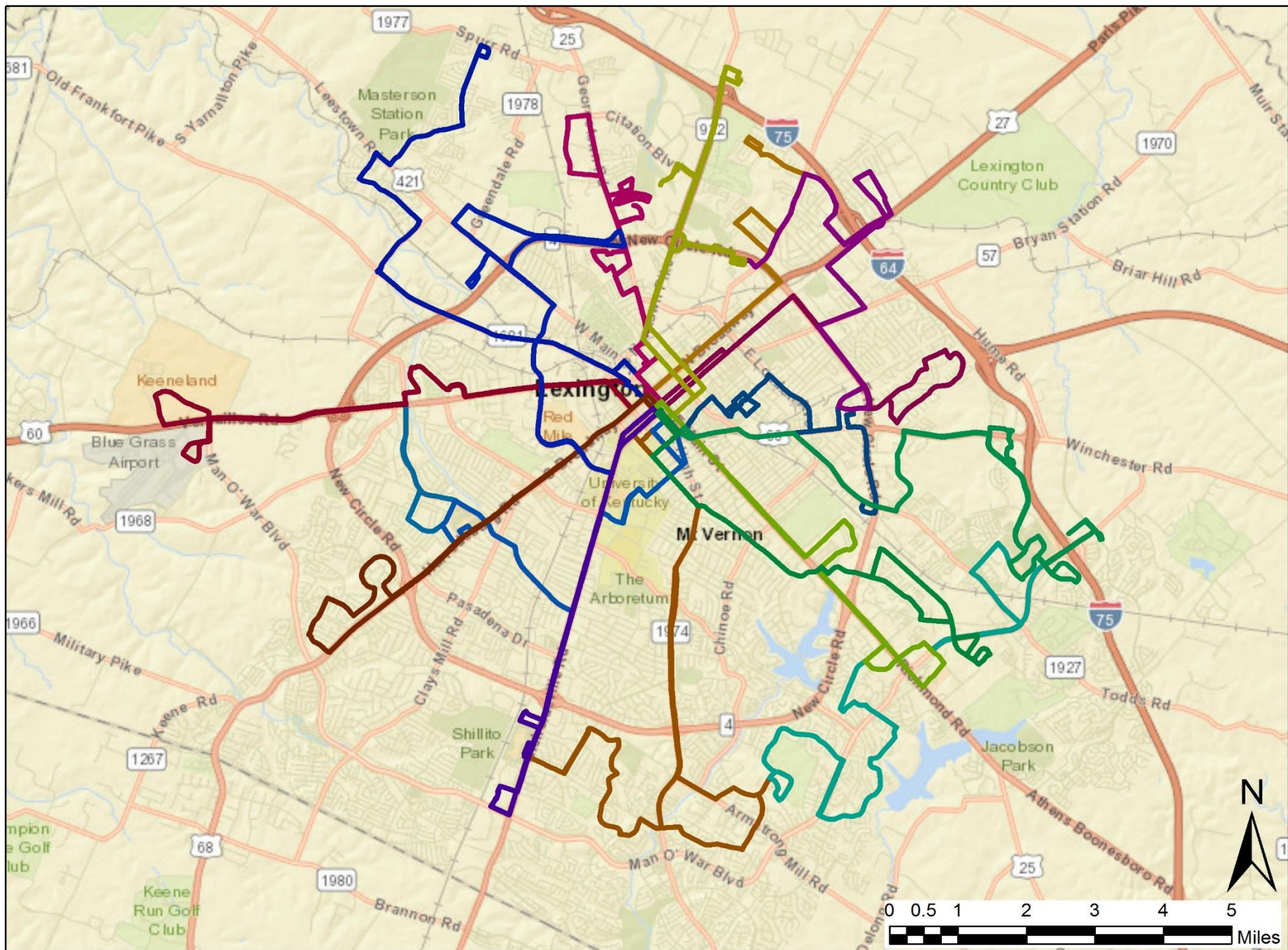
Outline

- Lexington and Lextran's Fixed-Route System
- Technology and fare collection
 - Fares
 - Transfers
 - Fareboxes
- Why does 2010 feel like the dark ages for fare collection?
- Responding through technology and system design

Lexington and Lextran

- Lexington is a radial city of about 310,000
 - Horse farms and an urban growth boundary
 - University of Kentucky
- Lextran operates 16 radial routes and 5 supporting circular/crosstown routes
 - About 3.7 million unlinked trips in 2016
 - Radial routes operate on a pulse schedule to our downtown transit center
 - 54 buses in maximum operation





Lextran Single Ride Fares

Fare Type	Cost
Adult	\$1.00
Students*	\$0.80
Youth (Ages 7-18)	\$0.80
Senior Citizens* (Age 62 and older)	\$0.50
People with Disabilities*	\$0.50
Medicare Cardholders*	\$0.50
Children 6 and under with Adult	FREE
Transfers	FREE

***ID Required.**



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Lextran Passes

Pass Type	Details	Price
Day Pass	Valid for unlimited rides in one day.	\$3.00
Reduced Day Pass*	Senior/Disabled rate for unlimited rides in one day.	\$1.50
Adult 20-Ride Pass	Pass is valid for 20 rides.	\$15.00
Youth 30-Day Pass*	Youth discount valid for unlimited rides for 30 days.	\$20.00
Adult 30-Day Pass	Valid for unlimited rides for 30 days from date of activation.	\$30.00
Reduced 30-Day Pass*	Senior/Disabled rate for 30-day unlimited pass.	\$15.00
Class Pass by Semester*	Valid for any student attending a school in Fayette County for unlimited rides for one semester (spring or fall). Valid student ID required.	\$50.00
Class Pass (Yearly)*	Valid for any student attending a school in Fayette County for unlimited rides for one school year (August-May). Valid student ID required.	\$75.00

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Transfers and the Farebox

- About 40 percent of our ridership transfers
 - Each transfer is valid for 90 minutes on any other route
 - Transfers are printed upon request to the bus operator
 - Passenger experience suffers by slowing boarding speed and extended layover times
- Unlimited passes do not require a printed transfer
- Operator interaction with multiple passes, ID cards, and fares

Printed Media

- 590,293 transfer tickets were printed in 2016
 - Maintenance wear and tear
 - Waste (used and unused)
- 1 million transfer tickets ordered every 18 months
 - Order totals about \$14,000
 - Climate controlled storage
- Single ride tickets cost Lextran between \$0.10 and \$0.25 each



Farebox Maintenance

- Wear and tear on the fareboxes due to the volume of transfer ticket printing and dunking
 - Two staff positions dedicated to preventive maintenance and repair
 - Damaged paper media jams the farebox leading to replacement during revenue hours
- Backend software and computer systems are costly to keep current
 - Operating systems and processing power has changed in the seven years since our fareboxes were implemented
 - Aged proprietary software is not always easily compatible with current technology

Why does 2010 feel like the dark ages for fare collection?

- Only about seven years after deployment, we are evaluating strategies to **not** use the fareboxes!
- Using emerging technology to augment our system or changing existing fare collection methods comes at an operational cost.
- Advancement in technology has outpaced ability to adopt new systems.
 - Cost of fare collection vs fares collected
 - Availability of grants

Responding with Technology

- Tap cards for 20-ride passes
 - Aiming toward reducing pass dunking to help extend the lifespan of the fareboxes
 - Tap cards can be reloaded with varying number of rides
 - Tap cards can't hold transfers, transfer tickets are still necessary
- Exploration of a mobile ticketing pilot project
 - Saturation of smartphones
 - Increased burden on operators

Long-Term Service Design

- Plan more through routes to reduce the need to transfer
- Shift rider culture from single rides to passes
- Free fares for all

Service design and system culture changes are time consuming to plan and implement. Its often not clear when comparing costs and benefits with adapting technology.

Conclusion

- Lextran's system leads to a relatively large volume of transfers
- Aging fareboxes and backend systems (seven years old!) demand constant care and upkeep
- Technology can help ease stress caused by volume of transfers but cost and implementation remain as roadblocks
- Upgrading technology seems more difficult than making system-wide route changes