GROUP A

Busriders
↳ where the stops are
↳ distances
↳ average traffic flow, times when bad/good
↳ accessibility (bikes // wheelchairs)

Stakeholder Goals
↳ important information
- bus stops (route)
- distance between stops / speed limits (time)
- passengers (accessibility (bike/wheelchair)
    ↳ max capacity
        ↳ peak times
            - traffic related
            - passenger peak times (commuters)
                - 5:00pm
                - 8:00-9:00am
- bus maintenance / switch overs @ terminals / breaks
    ↳ affects times
- price / fare
- weather conditions: may affect bridge usuage
    ↳ time
    ↳ plow routes / rural vs city center
- HR
    - new driver / driver training / illness
- online - maps / schedules

bridge backup during traffic peak times

Improvements
- GPS tracker
- approximate average commute at particular times
- weather: draw from environment Canada (weather network)

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Activity 1.

1) How long the bus stays at each bus stop
2) The distance between bus stops
3) How popular is the bus route
4) The type of passengers taking the bus route.
   (ex: hospital patients, handicapped etc).
5) Traffic lights / other street characteristics
6) Time of day / Date (holidays) that affect number of passengers
7) Weather

Senario B

→ There are bus maps but they do not show stops
→ Limited information (use alternatives such as google)
→ Difficult to find stops

Wish List

→ Application like google that shows
→ stops   → costs
→ times
→ basic directions

→ important stops or main stops
→ If buses will be filled & at what time
→ where to get off
→ bus intersections (which buses line up with
others)

→ Route changes

GETTING FROM POINT A TO POINT B

WHAT WE NEED:
    ARRIVAL/DEPARTURE TIME (OF RIDER)   BUS SCHEDULE
    LOCATION OF STOPS
    BUS ROUTES/#S
    FARE COST
wish   TRAFFIC CONDITIONS (RED LIGHTS, CONSTRUCTION, RUSH HOUR,
                        WEATHER
                  ↳ Real time data

INFO AVAILABLE:
    ROUTE MAPS, BUS SCHEDULE, GPS, GOOGLE MAPS

WISH LIST:

C. Determine total trip time.

Need to know
- when service starts
- Frequency of service.
- Traffic?
- The route you'll be taking
- your origin
- your destination
- delays (bus driver change, long stops)
- number of buses in service on a route.

Real world entities
- Stops
- Routes
- Schedules (frequency + time between stops)

Total Trip Time

Need to know

- where each stop is
- distance / time between stops
- arrival schedule (specific to the day)
- bus numbers + directions
- time of day

Need to Model

- bus stops
- terminal schedule (in case the rider needs to switch busses)

Note   need to be able to add the times of the routes together, view shortest routes

1) Determining Fares

1) What bus rate?
   - Metro Transit
   - Metro Link
   - Metro X

2) Who's the rider?
   - Student
   - Uni Student
   - Adult
   - Child
   - Senior

3) Method of payment?
   - Cash
   - UPass
   - Pass
   - Tickets
   - Transfer

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E)

1) Currently, drivers get to choose their route for the cycle based on seniority and previous routes taken (senior drivers get first pick).

a) Info available
- timings for stops
- time for shift
- name/number for stop
- whether they will be changing bus numbers
- gps gives them directions based on bus #

based on bus number

2) a) To improve automation:
- get rid of seniority rule, make the system randomly assign routes to drivers
- remove driver choice

b) For the future:
- traffic
- delays
- weather
- repetition of routes (same driver shouldn't do same route always).
- these should all be real time, some may be supplied by driver
- make all buses have gps systems

these may be automated through simple apparent interfaces

- Which bus to be on (Specific schedule, where its going)
- Which stops are going to be predetermined for stops
- If their bus times change
- When and where areas are high in traffic (pass through bus stops)
- ~~Specific schedule, where it~~
- When they have breaks, and whos taking over for them.
- ~~That to~~

- What happens if bus breaks down.

- What bus to be on
- Their schedule, where its going
- Predetermined stops to wait to stay on track
- When bus timings change
- When and where areas are high in traffic or construction.
- When they have breaks, who is taking over for them.

Kelloy