• One breakout group will identify promising applications to achieve goals related to overall system productivity
• For the purposes of this breakout, transformative productivity impacts have occurred when the transportation system has:
  – a transformative capability to reliably deliver the largest aggregate net value of goods and passengers through the transportation system within the current system footprint and without increased environmental impact, fuel use, or safety risk.
Today’s Exercise
(Part 1) Measuring Impact

• Feedback materials
  – Application scorecard
  – 3 poker chips (for voting)
• Facilitators preview overall exercise
• Facilitators lead group discussion on measuring transformative impact
  – Three example measures given
  – Participants may suggest others
  – Simple hand-count voting to determine up to three to be further explored
• Flip-chart exercise (group discussion)
  – Measure definition and current baseline (if known)
  – What change represents transformative impact?
Today’s Exercise (Part 2) High Impact Apps

• As we did yesterday, consider up to 10 applications in each impact area
  – One slide per concept, brief clarifying discussion
  – Record High-Medium-Low rating on your scorecard for each of the measures
• 3-2-1 Poker chip voting for the applications most likely to have transformative impact (per your measures)
• Facilitated discussion about the application with the highest vote total
  – Identify key data, communications and research needs for this application
  – How close to transformative will this application get us?
• Repeat facilitated discussion for second highest ranked application (time permitting)
• Reconvene to consider results within each breakout
  – Discuss the implications of your group process
  – Identify a presenter from your group for the breakout report at 11 AM
Exercise Ground Rules

- For today’s exercise, these items can’t be changed
  - Breakout group impact area definitions
  - No adding new application concepts
- Data environment assumptions from yesterday can be relaxed, however
  - Assumptions about what data is available can be tailored in this exercise
- Policy-related issues are NOT in play for discussion
  - If these topics come up, we will park the discussion until this afternoon, when we have special session to deal with these in turn
Impact Measure Definition Activity
Productivity Impact Measures

- Ratio of loaded moves to total moves
- Total vehicle-miles traveled (VMT)
- Total reliable trips delivered

- Are these the right measures?
- Can we better refine them?
- How many measures are needed (up to 3)?
- For each selected measure:
  - Record definition
  - Establish current baseline (if known)
  - Set transformative target

FACILITATORS: PLEASE RECORD ON FLIP CHARTS
USE SIMPLE HAND-COUNT VOTES WHEN NEEDED
Application Scorecard Activity
Next, we’re going to go through application concepts that address the productivity impact area.

We will present each concept on a single slide.

- You can ask clarifying questions, or offer suggestions about how data might be leveraged.
- But the concept itself cannot be altered, modified or enhanced in discussion.

Record an notes/comments on each application with an assessment on your scorecard for each criteria (High-Medium-Low).

- Let’s fill in our selected measures now on your scorecard.

Consider how you will vote for the applications with the most potential to achieve our transformative targets.

- What applications have the most potential to help us reach our transformative target by 2025?
Application #1: SPD-HARM

- Dynamic Speed Harmonization
- Problem Addressed:
  - Improve throughput and reduce risk of collision by optimizing for lane-specific speed limits on a freeway facility
- Description
  - Monitor traffic and weather data captured from multiple sources, and calculate a target speed for vehicles
  - Target speeds may be advisory or enforced, and may vary by location, e.g., distance upstream of a recurrent bottleneck, and by lane
  - Communicate target speeds through overhead dynamic signage, via DSRC to enabled vehicles with range (I2V) and from vehicle to vehicle (V2V)
Application #2: CACC

• Cooperative adaptive cruise control

• Problem Addressed:
  – Significantly improve throughput by increasing capacity and efficiency, and increase safety by minimizing the number of interactions between vehicles

• Description
  – A traffic manager sets a gap policy to form or break-up platoons of vehicles
  – Speeds are automatically adjusted by the vehicle based on communications from the traffic management center
  – Ad hoc or managed platoons of vehicles moving on the facility
  – Management of gaps, flows and arrival rates
  – Systematically accounts for differing vehicle weight and performance
Application #3: ETC

- **Electronic Toll Collection System**
- **Problem Addressed:**
  - Increase interoperability among ETC devices for vehicle-to-roadside communication using 5.9 GHz bandwidth
- **Description**
  - Current 915 MHz ETC systems rely on proprietary vehicle-to-roadside communications, limiting interoperability
  - Enable toll authority to accept electronic payments from vehicles equipped with electronic-payment services (EPS), regardless of EPS account ownership
  - Presents payment instructions to the driver, receives driver input, sends payment authorization, and displays toll payment status to the driver
  - Could be implemented in conjunction with managed or HOT lane concepts
Application #4: FSP

• Freight Signal Priority
• Problem Addressed:
  – Reduce delays and improve travel time reliability for commercial vehicles traversing signalized corridors with significant truck traffic
• Description
  – Give priority to freight vehicles at intersections near key facilities (ports, rail terminals, warehouses, distribution centers)
  – Signal timings may be adapted to dynamically changing commercial vehicle demand at intersections, or along the entire facility
  – Enhances safety and reduces environmental impacts on these facilities by reducing congestion and excessive idling
Application #5: **DR-OPT**

**Drayage Optimization**

**Problem Addressed:**
- Reduce freight delays at key facilities that overbook their capacity to ensure uninterrupted operations within the terminal/warehouse

**Description**
- Optimize drayage operations so that load movements are coordinated between freight facilities
- Individual trucks are assigned time windows within which they will be expected to arrive at a pickup or drop-off location
- Early or late arrivals to the facility are dynamically balanced
- Web-based forum for load matching provided to reduce empty moves
Application #6:
F-DRG

• **Freight Dynamic Route Guidance**

• **Problem Addressed:**
  – Lack of awareness of the best routes along congested corridors result in increased delays and costs to freight traffic

• **Description**
  – Address negative economic impact on the region by stifling the expansion and entry of logistics operations and logistics-dependent firms
  – Build on the C-TIP Real Time Traffic Monitoring (RTTM) and Dynamic Route Guidance (DRG) applications for best route between freight facilities
  – Routes calculated on current and predicted conditions
• Freight Real-Time Traveler Information with Performance Monitoring

• Problem Addressed:
  – Uncertainties in traffic congestion and weather conditions pose a productivity and safety risks to freight traffic, result in negative environmental impacts

• Description
  – Enhance traveler information systems to address specific freight needs
  – Provide route guidance to freight facilities, incident alerts, road closures, work zones, routing restrictions (hazmat, oversize/overweight)
  – Tailored weather information, regulatory and enforcement information (speed limit reductions), “concierge” services and maintenance locations
  – Intermodal connection information, container disposition and schedule
  – Performance monitoring
Application #8: S-PARK

• Smart Park and Ride System

• Problem Addressed:
  – Uncertainty about parking availability at transit stations limits the attractiveness of using transit for suburban commuters

• Description
  – Capture information on park and ride lot availability, and communicate that to potential travelers at key decision points
  – Utilize hands-free voice recognition within the automobile
  – Identify alternative parking location when lots are full, provide updated train/BRT schedule information, support parking reservation concept
Application #9: T-MAP

• Universal Map Application
• Problem Addressed:
  – Interoperability among proprietary map applications on current CAD/AVL systems increases cost and complexity of transit management
• Description
  – Pursue an open map concept to establish an universal map application supported by private transit CAD/AVL systems
  – Application processes RSS feeds from supporting agencies to incorporate incidents, detours, street closures, and other data on transit map applications
  – Transit agencies provide vehicle locations, passenger amenities, and service level to agencies scheduling street repairs or other road closures
Voting
Now that we’ve worked through all the applications, vote for the three most promising applications:

- BLUE = 3 points (top priority)
- RED = 2 points (second-highest priority)
- WHITE = 1 point (third-highest priority)

Deposit your chips in the voting bins identified for each application (also turn in your scorecards).

We’ll take a quick break (5 minutes) to tabulate the results.

One Bin, One Participant, One Chip rule:

- Do NOT dump all of your chips in a single bin
- We want your individual priority of the top THREE applications
Quick Break
Exercise Results
Exercise Complete