Presentation Roadmap

• Why do we need a new land use application?
• How does NERPM AB work without the application?
• What difference does the application make?
• How can you benefit from the application?
Transportation-Land Use Studies

- Developments of Regional Impact (DRIs)
- Comprehensive Plan Amendments (CPAs)
- Sector Plans
- Planned Unit Developments (PUDs)
- Access Permits
- Long Range Transportation Plans
- Corridor Studies
- Interchange Access Requests (IARs)
Typical Model Changes

Land Use/ Socioeconomic Data
- Household
- Employment
- School Enrollment

Highway Network
- Facility Types
- Number of Lanes
- Area Types/Capacities, etc.
Motivation for Land Use Application

• Simplify land use/socioeconomic data changes
• Improve data management and visualization
• Improve accuracy of results
• Maximize efficiency and return on investment
Population Types

Permanent
Group Quarters
Seasonal

Household Characteristics
- Age Head of HH
- Size
- # of Workers
- Income
- Children

Person Characteristics
- Gender
- Age
Land Use Data Characteristics

Employment Sectors

Industrial
- Agriculture, Forestry, Fishing and Hunting
- Mining, Quarrying, and Oil and Gas Extraction
- Construction
- Manufacturing
- Transportation and Warehousing

Service
- Information
- Finance and Insurance
- Real Estate and Rental and Leasing
- Professional, Scientific, and Technical Services
- Management of Companies and Enterprises
- Administrative and Support and Waste Management and Remediation Services
- Educational Services
- Health Care and Social Assistance
- Arts, Entertainment, and Recreation
- Other Services (except Public Administration)
- Public Administration

Commercial
- Utilities
- Wholesale Trade
- Retail Trade
- Accommodation and Food Services
Land Use Data Characteristics

School Enrollment

- Kindergarten thru 8th Grade
- High school 9th thru 12th Grade
- Colleges and Universities
DaySim Input Folder Organization

- **01_TAZ_Index**: TAZ Index file (internal and external TAZ numbers)
- **02_Parcel**: Parcel file (parcel level households, employment, school enrollment)
- **03_Household**: Households Records (household sizes, number of workers, income, etc.)
- **04_Person**: Persons Records (person type and age)
- **05_ixxi**: Ratio of Internal-External Commute Trips by TAZ
- **05_pnr**: Park and Ride and Kiss and Ride Lots (Coordinate, Capacity, Cost, PNR or KNR dummy)
- **06_Roster**: Mode and Path Combination
- **07_Coefficients**: DaySim Model Coefficients
- **09_SeedShadow**: Shadow Price (to convert work location choice)
Parcel File in DaySim Format

- Parcel base file includes all six counties in the region
- Household number at TAZ level matches to control file
- Employment by section at TAZ level matches to control file
- On-street parking prices for Jacksonville and St. Augustine only

### FIELD | DESCRIPTION
--- | ---
parcelid | parcel ID number
xcoord_p | x coordinate – state plane feet
ycoord_p | y coordinate – state plane feet
sqft_p | parcel area – square feet
taz_p | corresponding TAZ number
block_p | corresponding census block number
hh_p | number of households on parcel
stugrd_p | grade school enrollment on parcel
stuhgh_p | high school enrollment on parcel
stuuni_p | university enrollment on parcel
empedu_p | educational employment on parcel
empfoo_p | food employment on parcel
empgov_p | government employment on parcel
empind_p | industrial employment on parcel
empmed_p | medical employment on parcel
empofc_p | office employment on parcel
empret_p | retail employment on parcel
empsvc_p | service employment on parcel
empoth_p | other employment on parcel
emptot_p | total employment on parcel
parkdy_p | off-street daily parking on parcel
parkhr_p | off-street hourly parking on parcel
ppricdyp | off-street daily parking price
pprichrp | off-street hourly parking price

{CATALOG_DIR}\DaySimInput\02_Parcel\_jacksonville_parcel.dat
### Household Records

**{CATALOG_DIR}\DaySimInput\03_Household\jax_hrec.dat**

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<thead>
<tr>
<th>Variable</th>
<th>Definition</th>
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<tr>
<td>HHNO</td>
<td>Household id</td>
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<tr>
<td>HHSIZE</td>
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<tr>
<td>HHVEHS</td>
<td>Vehicles available</td>
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<tr>
<td>HHWKRS</td>
<td>Household workers</td>
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<tr>
<td>HHFTW</td>
<td>HH full time workers (type 1)</td>
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<tr>
<td>HHPTW</td>
<td>HH part time workers (type 2)</td>
</tr>
<tr>
<td>HHRET</td>
<td>HH retired adults (type 3)</td>
</tr>
<tr>
<td>HHOAD</td>
<td>HH other adults (type 4)</td>
</tr>
<tr>
<td>HHUNI</td>
<td>HH college students (type 5)</td>
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<tr>
<td>HHHSC</td>
<td>HH high school students (type 6)</td>
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<tr>
<td>HH515</td>
<td>HH kids age 5-15 (type 7)</td>
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<tr>
<td>HHCUS</td>
<td>HH kids age 0-4 (type 8)</td>
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<tr>
<td>HHINCOME</td>
<td>Household income ($)</td>
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<td>HOWNRENT</td>
<td>Household own or rent</td>
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<tr>
<td>HRESTYPE</td>
<td>Household residence type</td>
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<tr>
<td>HHPARCEL</td>
<td>Residence parcel id</td>
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<td>HHEXPFAC</td>
<td>HH expansion factor</td>
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<td>SAMPTYPE</td>
<td>Sample type</td>
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### Person Records

**{CATALOG_DIR}\DaySimInput\04_Person\jax_prec.dat**

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<th>Definition</th>
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<td>hh id</td>
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<tr>
<td>PNO</td>
<td>person seq no on file</td>
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<tr>
<td>PPTYP</td>
<td>person type</td>
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<td>PAGEY</td>
<td>age in years</td>
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<td>PGEND</td>
<td>gender</td>
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<td>PWTYPE</td>
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<td>PWPCL</td>
<td>usual work parcel id</td>
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<td>PSTYP</td>
<td>student type</td>
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<tr>
<td>PSPCL</td>
<td>usual school parcel id</td>
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<tr>
<td>PUWMODE</td>
<td>usual mode to work</td>
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<tr>
<td>PUWARRP</td>
<td>Usual arrival period to work</td>
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<tr>
<td>PUWDEPP</td>
<td>Usual depart period from work</td>
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<tr>
<td>PTPASS</td>
<td>transit pass?</td>
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<tr>
<td>PPAIDPRK</td>
<td>paid parking at workplace?</td>
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<tr>
<td>PDIARY</td>
<td>Person used paper diary?</td>
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<tr>
<td>PPROXY</td>
<td>proxy response?</td>
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<tr>
<td>PSEXPFAC</td>
<td>Person expansion factor</td>
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</tbody>
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Parcel and TAZ Correspondence
- Add TAZ centroid to network
- Add TAZ number to DaySim TAZ Index
- Add parcel to DaySim parcels file to correspond to new TAZ
- Adjust sq. ft. and employment of old parcel
- Add new parcel record with employment
- Add TAZ to Employment dbf file
- Adjust employment of old TAZ
- Add new TAZ record with employment info
- Add new TAZ to WorkerIXXI file
Data Management in Geodatabase
Land Use Application within Cube

User Friendly Application in Cube

- Create & select scenario
- Enter year
- Generate and or edit files
- Click Run
Completion screen

- Default files are created and placed in the appropriate DaySim input folder
ArcMap Editing Interface
Editing Input Attributes in ArcMap

- Parcel boundaries
  - Split
  - Merge
- Land use attributes
  - Number of Households
  - Number of Employees
    - Education
    - Food service
    - Industrial
    - Medical
    - Office
    - Retail
    - Service
    - Other
    - Total
  - Number of Students
    - Grade School (kindergarten thru 8th grade)
    - High School
    - University/college
ArcMap Editing Interface
Messages indicates that DaySim input files are generated and placed in the appropriate DaySim input folders.
Next Steps

• Highway network editing in ArcMap
• Incorporate scenario setup script
• Update Wiki documentation
• Distribute new model version to NERPM AB users
• Potential use in other ABMs
Questions?

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