

Land Use and Transportation Planning Toolbox



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LAND USE PROBLEMS



Problems	Recommended Tools
Unlimited outward extension or unplanned consequences of development	<ul style="list-style-type: none"> ▪ Urban service districts ▪ Complete build out analysis of Master and Zoning plans
Low density residential and commercial development	<ul style="list-style-type: none"> ▪ Allow mixed use development ▪ PUDs with density bonuses
Leap frog development	<ul style="list-style-type: none"> ▪ Urban service districts
Fragmentation of powers over land use among many small localities	<ul style="list-style-type: none"> ▪ Joint planning agreements with revenue sharing ▪ Joint planning for transportation improvements
Dominance of transportation by private automotive vehicles	<ul style="list-style-type: none"> ▪ Transit friendly design ▪ Mixed use development
No centralized, regional or coordinated planning of land use	<ul style="list-style-type: none"> ▪ Joint planning agreements with revenue sharing
Widespread strip commercial development	<ul style="list-style-type: none"> ▪ Allow mixed use development
Great fiscal disparities among localities	<ul style="list-style-type: none"> ▪ Joint planning agreements with revenue sharing
Congestion on road network and segregation of types of land uses in different zones	<ul style="list-style-type: none"> ▪ Allow mixed use development
Lack of low-income housing	<ul style="list-style-type: none"> ▪ Allow mixed use development ▪ PUDs with density bonuses
Loss of agricultural land, open space or rural character	<ul style="list-style-type: none"> ▪ For agricultural – adopt 40 to 80 acres per DU zoning ▪ For rural character – cluster development near urban centers and along major travel corridors and adopt larger lot zoning with a minimum of 10 acres per DU ▪ For open space – use large lot zoning and cluster development on smaller lots and dedicate open space or park land



MIXED USE DEVELOPMENT



Tool:	Benefits:
<p>Allow different appropriate uses on different floors—for example: first floor commercial with upper level residential.</p>	<ul style="list-style-type: none"> ▪ Supports public transportation with lower residential densities. ▪ Increased security and safety with people living and working in the neighborhood. ▪ Stimulates the evening and weekend economy
<p>Permit compatible uses in the same zone when designed to encourage interaction.</p>	<ul style="list-style-type: none"> ▪ Reduces the # and length of automobile trips ▪ Supports walkability of community ▪ Retains quality of life and protects the environment ▪ Prevents dead office zones
<p>Provide transportation nodes within all zones and all developments</p>	<ul style="list-style-type: none"> ▪ Supports public transportation with lower residential densities
<p>Link nodes of public spaces with residences, parks, offices and other destinations in the community</p>	<ul style="list-style-type: none"> ▪ Supports walkability of community ▪ Increased security and safety with people
<p>Redevelop obsolete or underutilized old strip commercial into a mixed-use residential/commercial development such as redevelopment of unnecessarily large parking lots with infill development</p>	<ul style="list-style-type: none"> ▪ Revitalizes the neighborhood and community ▪ Reduces paved areas ▪ Supports walkability of community
<p>Provide transit friendly development with increased density near major transportation nodes</p>	<ul style="list-style-type: none"> ▪ Supports public transportation with lower residential densities ▪ Protects open space
<p>Reduce required parking for mixed use developments</p>	<ul style="list-style-type: none"> ▪ Supports walkability of community ▪ Reduces the # of automobile trips
<p>Provide incentives for mixed use development</p>	<ul style="list-style-type: none"> ▪ Supports walkability of community ▪ Reduces congestion ▪ Provides for more vibrant community ▪ Supports public transportation with lower residential densities

TRANSIT FRIENDLY DESIGN



Tool:	Benefits:
Provide density to support public transportation (minimum of 6-7 DU/Acre)	<ul style="list-style-type: none"> ▪ Increases work force availability ▪ Allows public transit to provide true alternative to automobile
Provide land use development patterns such as mixed use to support public transportation	<ul style="list-style-type: none"> ▪ Creates the ability to trip chain in one area ▪ Increases security and safety of system
Include non-motorized and public transportation considerations as part of site plan review guidelines	<ul style="list-style-type: none"> ▪ Encourages pedestrians and provides convenient access to bus stops.
Provide sidewalks as part of all developments to provide connections to and along transit routes	<ul style="list-style-type: none"> ▪ Encourages pedestrians and provides convenient access to bus stops.
Provide non-motorized easements connecting directly to major street in clustered developments	<ul style="list-style-type: none"> ▪ Encourages pedestrians and provides convenient access to bus stops.
Require increased density along public transportation corridors and near transportation nodes	<ul style="list-style-type: none"> ▪ Encourages pedestrians and provides convenient access to bus stops. ▪ Increases work force availability
Minimize walking distance by reducing setbacks and orienting building entrances to street and placing parking in rear	<ul style="list-style-type: none"> ▪ Encourages pedestrians and provides convenient access to bus stops. ▪ Increases work force availability
Decrease public transportation headways to increase ridership	<ul style="list-style-type: none"> ▪ Allows public transit to provide true alternative to automobile ▪ Increases work force availability ▪ Increases security and safety of system
Cluster office and industrial parks with street level design minimizing setbacks and maximizing open space	<ul style="list-style-type: none"> ▪ Encourages pedestrians and provides convenient access to bus stops.



WALKABILITY DO'S AND DON'TS



Do's	Don'ts
<ul style="list-style-type: none"> ▪ Add trees for safety ▪ Add parking for safety ▪ Add lanes for safety ▪ Narrow lanes for safety ▪ Narrow intersections for safety ▪ Add or widen sidewalks for added capacity ▪ Reduce speeds using traffic calming such as neckdowns, bulbouts, raised intersections, etc ▪ Provide pedestrian refuge areas at wide crossings ▪ Provide mixed use zoning to allow walking trips ▪ Provide neighborhoods schools and parks ▪ Distribute traffic among many streets to reduce high volume streets ▪ Provide convenient and safe crossings ▪ Provide compact development ▪ Provide public transit opportunities ▪ Provide way finding signs ▪ Provide lighting ▪ Provide benches 	<ul style="list-style-type: none"> ▪ Remove trees in downtowns ▪ Remove parking ▪ Add lanes ▪ Widen lanes ▪ Widen intersections ▪ Remove sidewalks for added capacity ▪ Concentrate traffic on limited number of streets ▪ Place sidewalks immediately adjacent to the street ▪ Expect pedestrians to walk more than 150 out of their way to cross a street



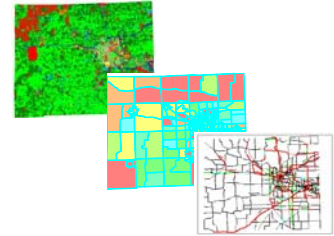
TRANSPORTATION PROBLEMS



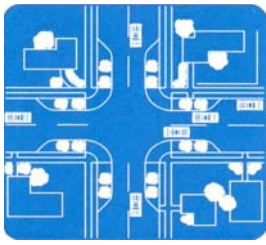
Problems	Recommended Tools
Traffic volumes over capacity	<ul style="list-style-type: none"> ▪ Travel demand management ▪ Access management ▪ ITS ▪ Mixed use development ▪ Transit friendly design
High crash (accident) rates	<ul style="list-style-type: none"> ▪ Travel demand management ▪ Access management ▪ Walkable and bikeable communities
Trucks and cut through traffic	<ul style="list-style-type: none"> ▪ Traffic calming
Street over or under designed	<ul style="list-style-type: none"> ▪ Context sensitive design
Idling traffic causing pollution	<ul style="list-style-type: none"> ▪ Travel demand management ▪ ITS
Environmental/Physical/ROW	<ul style="list-style-type: none"> ▪ ROW Plans ▪ Context sensitive design
Poor access design	<ul style="list-style-type: none"> ▪ Transit friendly design ▪ Context sensitive design
Dispersed land use inducing more travel	<ul style="list-style-type: none"> ▪ Mixed use development ▪ Walkable and bikeable communities ▪ Transit friendly design
Non-attainment areas	<ul style="list-style-type: none"> ▪ Travel demand management ▪ Access management ▪ ITS
Dependency on the automobile	<ul style="list-style-type: none"> ▪ Travel demand management ▪ Mixed use development ▪ PUD's with density bonuses
Inadequate funds for transportation improvements	<ul style="list-style-type: none"> ▪ Travel demand management ▪ Transit friendly design ▪ Walkable and bikeable communities ▪ Traffic impact analysis ▪ ITS
Public complaints but opposed to making improvements	<ul style="list-style-type: none"> ▪ Travel demand management ▪ Access management



TRANSPORTATION PLANNING TOOLS



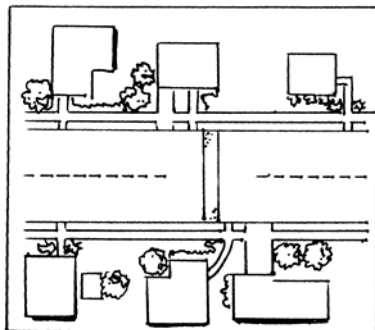
Tool:	Benefits:
Travel Demand Management	<ul style="list-style-type: none"> ▪ Reduces congestion without widening roads
Multi-jurisdictional Corridor Committees	<ul style="list-style-type: none"> ▪ Promotes multi-jurisdictional agency cooperation on land use and transportation planning decisions
Traffic Impact Analysis	<ul style="list-style-type: none"> ▪ Alerts transportation agencies & officials of a need to improve roads ▪ Identify transportation needs & impacts when land use is under consideration ▪ Can assist with negotiations for developer funding
Access Management Plans	<ul style="list-style-type: none"> ▪ Preserves capacity of the road facility by reducing conflicts & delays ▪ Provides another tool for local elected officials to direct development & access
Right of Way Plans	<ul style="list-style-type: none"> ▪ Identifies right of way needed for future transportation improvements prior to development ▪ Provides another tool for local elected officials to direct development & access
Regional Transportation Models	<ul style="list-style-type: none"> ▪ Simulates future traffic based on land use assumptions to help identify improvements that may be necessary
Transportation Corridor Computer Traffic Simulation	<ul style="list-style-type: none"> ▪ Illustrates current & projected traffic patterns & allows improvements to be easily tested
Integrated Transportation Systems (ITS)	<ul style="list-style-type: none"> ▪ Facilitates scientific response to traffic conditions including the adjustment of signal timing ▪ Maintains proper traffic progression along congested corridors



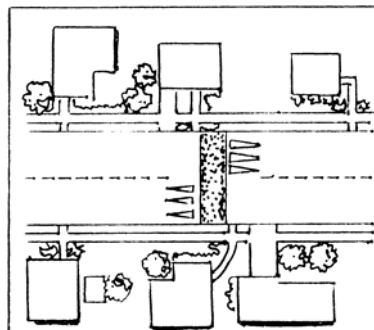
TRAFFIC CALMING



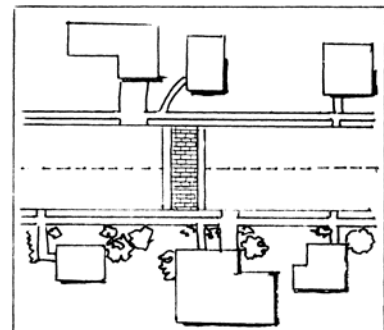
Tool:	Benefits:
Alternate intersections or crosswalks: raised, different pavement material, underground lighting	<ul style="list-style-type: none"> ▪ Increased visibility of pedestrians ▪ Decreases speed
Bump outs	<ul style="list-style-type: none"> ▪ Makes street more walkable ▪ Reduces crossing pedestrian distance ▪ Provides location for landscaping ▪ Improves sight distance
Speed humps or speed tables	<ul style="list-style-type: none"> ▪ Reduces speed
Narrower street cross sections	<ul style="list-style-type: none"> ▪ More harmonious with certain land use types ▪ Often reduces speed ▪ Reduces crossing pedestrian distance
Use of medians	<ul style="list-style-type: none"> ▪ Improves aesthetics ▪ Reduces crossing distance for pedestrians ▪ Significantly reduces conflicts and crashes using indirect left turns
Textured pavements	<ul style="list-style-type: none"> ▪ Alerts drivers to changes ▪ Provides visual interest
Pavement markings	<ul style="list-style-type: none"> ▪ Provides clear direction ▪ Alerts drivers to changes
Traffic Circles (not the similar roundabouts)	<ul style="list-style-type: none"> ▪ Provides less stopping and improves air quality ▪ Reduces speeds
Traffic shifts, angle points or Chicanos	<ul style="list-style-type: none"> ▪ Reduces speeds ▪ May reduce cut through traffic



Speed Bump



Speed Hump



Speed Table



WALKABLE AND BIKEABLE COMMUNITIES



Tool:	Benefits:
Provide continuous public system	<ul style="list-style-type: none"> ▪ Reduces reliance on automobile ▪ Provides transportation choices
Consolidate or minimize driveways to ensure pedestrian and bicyclist safety	<ul style="list-style-type: none"> ▪ Reduces conflict points between automobiles and pedestrians or bicyclists
Control and reduce drive widths	<ul style="list-style-type: none"> ▪ Reduces crossing distances for pedestrians ▪ Improves safety ▪ Focuses automobile movements
Provide pedestrian and bicyclists refuges in wide crossings	<ul style="list-style-type: none"> ▪ Reduces crossing distances for pedestrians ▪ Improves safety
Link non-motorized paths between developments and communities	<ul style="list-style-type: none"> ▪ Reduces reliance on automobile ▪ Provides transportation choices
Provide direct access easements in subdivisions with curvilinear street systems	<ul style="list-style-type: none"> ▪ Reduces reliance on automobile ▪ Provides transportation choices ▪ Supports public transit
Provide paths to destinations and along major corridors	<ul style="list-style-type: none"> ▪ Reduces reliance on automobile ▪ Provides transportation choices ▪ Improves vitality of community
Provide rear access for automobiles in both residential and commercial developments	<ul style="list-style-type: none"> ▪ Reduces conflict points between automobiles and pedestrians or bicyclists
Provide wayfinding signage	<ul style="list-style-type: none"> ▪ Reduces reliance on automobiles ▪ Improves sense of community
Narrow local streets to slow traffic through use of bump outs	<ul style="list-style-type: none"> ▪ Reduces crossing distances for pedestrians ▪ Improves safety
Provide bike lanes, wide curb lanes and paved shoulders	<ul style="list-style-type: none"> ▪ Provides transportation choices ▪ Improves safety
Provide bike parking facilities such as lockers, bike racks at modal transfer points, schools, public parks and buildings and commercial establishments	<ul style="list-style-type: none"> ▪ Provides transportation choices ▪ Improves vitality of community ▪ Reduces reliance on automobile
Provide bike racks on public transit vehicles	<ul style="list-style-type: none"> ▪ Provides transportation choices ▪ Improves vitality of community



CONTEXT SENSITIVE DESIGN



Before

After

Tool:	Benefits:
Public involvement tailored to location and improvement	<ul style="list-style-type: none"> ▪ Community buy in ▪ Less project opposition and delays
Maintain the Relationship of Building and the Street	<ul style="list-style-type: none"> ▪ Increases security and safety of community
Design for a multimodal system making the streets good neighbors	<ul style="list-style-type: none"> ▪ Provides transportation choices ▪ Increases security and safety of community ▪
Promote street as an amenity and inspire investment	<ul style="list-style-type: none"> ▪ Provides improved community image and vitality
Design improvement to fit environment and retain sense of place	<ul style="list-style-type: none"> ▪ Provides improved community image and vitality
Recognize significant cultural resources and plan preservation	<ul style="list-style-type: none"> ▪ Provides improved community image and vitality
Revise road and bridge standards to reflect urban versus rural needs	<ul style="list-style-type: none"> ▪ Provides improved community image and vitality ▪ Less project opposition and delays



ESSENTIAL PARTNERS FOR A *SUSTAINABLE FUTURE*



<p>Elected and Appointed Officials</p> <p>Most challenging position - must look at projects from both a local and regional perspective and be able to compromise</p>	<ul style="list-style-type: none"> ▪ Develop a regional vision ▪ Establish a regional policy ▪ Provide timely approvals of developments ▪ Adopt and implement master and zoning plans
<p>Transportation Officials</p>	<ul style="list-style-type: none"> ▪ Adopt Unified Work Program, Long Range Plan (LRP) at least 20 years, and Transportation Improvement Program (TIP) ▪ Inform and education the public and elected officials ▪ Provide recommendations of transportation options
<p>Employers</p>	<ul style="list-style-type: none"> ▪ Provide alternative transportation incentives ▪ Provide flexible work schedules ▪
<p>Private Sector</p>	<ul style="list-style-type: none"> ▪ Provide a variety of housing styles ▪ Provide developments with clusters to protect and preserve open space and reduce required infrastructure ▪ Fulfill public sector planning requirements when staff is not available
<p>Environmental Planners</p>	<ul style="list-style-type: none"> ▪ Educate the planning professionals, elected officials and private sector developers on minimizing wetland and air impacts while maximizing developments ▪ Protect natural resources
<p>Land Use Planners</p>	<ul style="list-style-type: none"> ▪ Provide master plans and zoning plans that allow for mixed-use development, density incentives while reducing approval times ▪
<p>Municipal Planners</p>	<ul style="list-style-type: none"> ▪ Provide master plans and zoning plans that allow for mixed-use development, density incentives while reducing approval times ▪ Plan for special needs populations ▪ Consider transportation needs for all modes with each development proposal ▪
<p>General Public</p>	<ul style="list-style-type: none"> ▪ Provide positive feedback and suggestions ▪ Move past the NIMBY mentality ▪ Support regional planning ▪ Support funding initiatives for transportation services and improvements