New Partners for Smart Growth Denver January 27, 2006

Breaking the

12 Code Obstacles Smart Growth and What Cities are Remove Them Doing

Jeffrey Tumlin Nelson\Nygaard Consulting

Nelson Nygaard

12	Code	Obst	acles
12	COUL	: ODSI	auies

- 1. Parking and Traffic Code
- 2. Building Code
- 3. Uniform Fire Code
- 4. Clean Water Act
- 5. Fair Housing Act
- 6. State Schools Codes
- 7. Congestion Management Program
- 8. Zoning & Subdivision Codes: Design and Parking
- 9. Road Design Code
- 10. Street Typologies and Transportation Performance Measures
- 11. Impact Fees
- 12. Environmental Compliance

Breaking the Code: 12 Obstacles to Smart Growth

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- 1. Parking and Traffic Code · Residential Parking Permit Districts
 - -Critical for addressing spillover parking concerns of infill development
 - -Requires neighborhood vote on parking district
- Austin Parking Benefit Districts
 - -http://www.ci.austin.tx.us/parkingdistrict/default.htm
 - -Allows residents to sell surplus neighborhood parking capacity to
 - -Revenue returned to neighborhood for community improvements

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1. Parking and Traffic Code

- · Parking management in Old Pasadena
 - -\$1/hour meters installed 1993
 - -Garage fees
 - -Annual revenues of \$5.4 million
 - -Tiny in-lieu of parking fees
- · Revenues fund garages, street furniture, trees, lighting, marketing, mounted police, daily street sweeping & steam cleaning
- · Focus on availability, not price



Old Pasadena, 1992-99: Sales Tax Revenues Quadruple

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1. Parking and Traffic Code

- · Redwood City, CA: Meter and garage rates vary to achieve 15% vacancy on all blocks at all times.
- http://www.redwoodcity.org /government/council/packet s/2005/0606/Reg_050606-8A.pdf



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2. Building Code

Many jurisdictions rely on the Building Officials and Code Administrators (BOCA) 1996/1999:

Establishes minimum requirements for materials and methods of construction, addresses loads and stresses, fire protection, special uses, lighting and ventilation, and means of egress.

Major issues when renovating old buildings:

- Many existing buildings were built to comply with an earlier building code or no code, yet are often still safe and sound
- Untapped housing stock in urban areas old buildings must be brought into compliance with current building codes for new construction
- This is a very expensive process that may not result in better safety

Source: New Jersey's Rehabilitation Subcode http://www.state.nj.us/dca/codes/rehab/pioneerart.shtml

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2. Other Rehabilitation Codes

- -New Jersey Rehabilitation Subcode (1998)
- -Los Angeles Adaptive Reuse Ordinance
- -California's State Historical Building Code http://www.dsa.dgs.ca.gov/StateHistoricalBuildingSafetyBoard/default.htm
- -Rhode Island Rehabilitation Code

http://www.rbfc.state.ri.us/

- -Kansas City Building and Rehabilitation Code http://www.kcmo.org/codes.nsf/web/kcbc?opendocument
- Many others...

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3. Uniform Fire Code (UFC)

One critical component of a community's transportation system is effective emergency response. In some instances, fire, ambulance, or police officials have expressed concerns with smart growth neighborhood street designs because of concerns about access." (Source: Getting to Smart Growth 11)

- Narrower streets
- Smaller intersections
- Shorter curve radii
- Fire equipments get larger and larger



- UFC: One of several model codes, created by Western Fire Chiefs Association, *NOT* a national standard
- Adopted by California, Oregon, some other states
- Requires 20' clear street width between parked cars

Source: Getting to Smart Growth II http://www.smartgrowth.org/pdf/gettosg2.pdf

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3. Uniform Fire Code (UFC)



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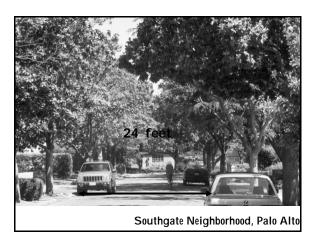
3. Uniform Fire Code (UFC)

Traditional Neighborhood Development Mission: Improve Overall Life Safety

	Fire	Traffic
Fatalities	3,671	41,611
Injuries	21,875	3,236,000

Sources:
Traffic Safety Facts 1999, Overview, Publication No. DOT HS 809 09
Fire Loss in the United States During 1999, Michael J Karter, Ir

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Conventional

- 30-35 mph speeds comfortable
- Bare, stark, uninviting
- Survivable, but not fun

Traditional

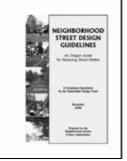
- 20-25 mph speeds comfortable
- Green, sustainable, inviting
- Pleasant for walking, bicycling and driving

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3. Uniform Fire Code (UFC) - Solutions

- 1997 Oregon law clarified authority to establish street standards
 - -Local government street -Local government street standards shall "supersede and prevail over any specifications and standards for roads and streets set forth in a uniform fire code adopted by the State Fire Marshal, a municipal fire department or a county firefighting anderor." firefighting agency.
 - -Portland, other cities now allow safer streets
 - -Leads to "Consensus Guidelines" book (pictured)



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3. Uniform Fire Code (UFC) - Solutions

- North Carolina Traditional Neighborhood Street Guidelines (2000)
 - -Supersedes the NCDOT standards in all TND neighborhoods
 - "A street should be no wider than the minimum width needed to accommodate the usual vehicular mix desired of that street"
 - "A high level of accessibility is offered to emergency vehicles by an interconnected TND network"



Source: http://www.doh.dot.state.nc.us/operations/tnd.pdf

NEISTIN TYPE APPL Breaking the Code: 12 Obstacles to Smart Gro

3. Uniform Fire Code (UFC) - Solutions Smart Growth Many fire routes Better response time · Sprawl: - One fire route - Long distances - Access shut down with one double-parked car Redundant system can't be blocked Breaking the Code: 12 Obstacles to Smart Growth Jeffrey Tumlin, Nelson\Nygaard Consulting Nelson Mygaard

4. Clean Water Act - Section 303

- · Requires states to set and then achieve Total Maximum Daily Load limits, limiting total pollution into each waterbody
- · Problem: Resulting state and/or local requirements discourage infill
 - On-site storm water retention requirements even on downtown lots
 - -Lot coverage limits (often 45% max.) favor sprawl on outlying farmland
- River setbacks even in town centers
- · Solution: Think regionally, act locally
- Build vital, compact towns

Source: Belle Hall Study http://www.doverkohl.com/project_grap hic_pages_pfds/Belle%20Hall%20project %20page.pdf

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4. Water Quality a	4. Water Quality and Smart Growth					
EPA Research on Smart Growth & Water						
Scenario A: 1 unit/acre	Scenario C: 8 units/acre					
S	A A	aaaa				
• Impervious cover = 20%	• Impervious cover = 38%	• Impervious cover = 65%				
 Runoff/acre = 18,700 ft3/yr 	 Runoff/acre = 24,800 ft3/yr 	 Runoff/acre = 39,600 ft3/yr 				
 Runoff/unit = 18,700 ft3/yr 	 Runoff/unit = 6,200 ft3/yr 	 Runoff/unit = 4,950 ft3/yr 				

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4. Water Quality and Smart Growth Scenario A Scenario B Scenario C The lower density scenario creates more run-off and consumes 2/3 more land that the higher density scenario. Nelson Mygaard 5. Fair Housing Act & Other Disability Law • If a building with 4+ units has an elevator and opened after 3/13/91, then ALL units and ALL public and common areas $\,$ must be wheelchair accessible • Conflict: Accessibility vs. courtyard housing and other compact housing • Courtyard housing: For privacy & cost-savings, 2nd floor units have private entrances via stair - no outdoor hallway past your windows • If ALL housing must be wheelchair accessible, only ranch houses & corridor-loaded apts. can be built Reference:http://www.hud.gov/offic es/fheo/FHLaws/yourrights.cfm Breaking the Code: 12 Obstacles to Smart Growth Jeffrey Tumlin, Nelson\Nygaard Consulting Nelson Nygaard

6. State Schools Standards

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6. State Schools Standards Barriers to Smart Growth Schools 1. Acreage Standards 2. State Funding Biases 3. Conflicts Between Community Planning and School Planning 4. Building Codes Reference: National Trust for Historic Preservation, Why JohnnyCan't, Walk to School, 2002. http://www.nationaltrust.org/issues/schoolsRpt.pdf Neison Mygaard Breaking the Code: 12 Obstacles to Smart Gr 6. State Schools Standards Barriers to Smart Growth Schools 1. Acreage Standards (Recommended by Council of Educational Facility Planners International (CEFPI)) · Elementary School: At least 10 acres of land plus one acre for every 100 students • Middle School: At least 20 acres of land plus one acre for every 100 students · High School: At least 30 acres of land plus one acre for every 100 students School children are unable to walk or bike to school as schools are located in outlying areas to comply with acreage standards. Breaking the Code: 12 Obstacles to Smart Growth Nelson Mygaard 6. State Schools Standards Barriers to Smart Growth Schools 2. State Funding Biases · State reimbursement policies can favor building new schools over

upgrading existing schools

from the state.

more easily.

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 "Two-thirds rule:" If the cost of renovating an older school exceeds the two-thirds of the cost of a new school, the school district should build a new school if the district wants to receive financial assistance

• The Two-thirds rule is arbitrary, if all new construction costs are factored into the cost analysis, renovation projects may meet the rule

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6. State Schools Standards Solutions to State School Standards · Eliminate acreage standards. • Encourage State laws that provide funding for renovations and good maintenance of existing schools. · Establish lines of communication between land use, transportation and school planning offices. · Recognize that multiple story school buildings, wooden frame buildings and existing buildings can be brought up to safety and ADA codes. Promote smaller schools. The Gates Foundation has funded 1457 new small high schools. Breaking the Code: 12 Obstacles to Smart Growth Neison Mygaard 7. Congestion Management Systems California approved a 9c gas tax increase in June 1990: -introduced transportation blueprint for more flexible and effective transportation planning and programming required urbanized counties of 50,000+ to develop Congestion Management Programs (CMPs) to identify and fund "comprehensive strategies needed to develop appropriate responses to transportation needs" (32/58 counties) • Federal requirement for CMSs under ISTEA (1991): -aim to "provide for effective management of new and existing facilities through the use of travel demand reduction and operational management strategies" -include methods to monitor/evaluate system performance, identify alternative strategies to alleviate congestion/enhance mobility, assess/implement cost-effective actions, and evaluate effectiveness Reference: http://ntl.bts.gov/DOCS/153IAW.html Breaking the Code: 12 Obstacles to Smart G Nelson Nygaard **CMS Requirements** • Designate roadways e.g. arterial, highway (vehicle use) · Adopt traffic LOS standards no lower than LOS E or current (if worse than LOS E) · Establish standards for transit frequency, routing and operator coordination · Adopt and implement local ordinances for trip reduction and travel demand • Set up program to analyze transportation impacts of local land use decisions • Develop 7-year capital improvement program to maintain or improve traffic LOS and transit performance Reference: http://www.fhwa.dot.gov/resourcecenter/teams/planning/cms.cfm Breaking the Code: 12 Obstacles to Smart Grou Neison Nygaard

Overcoming CMP Obstacles

- California's SB1636 (Figueroa, signed 2002) "infill opportunity zones" law for counties of 400,000+
 - Designates infill opportunity zones which are zoned for compact residential or mixed-use within 1/3 mile of a transit stop with frequent service
 - -These zones can be declared exempt from LOS traffic standards specified in State Congestion Management Act
 - Cities can either employ alternative CMP LOS standards or approve a list of flexible LOS mitigation options that would enhance walkability and transit service

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8. Zoning & Subdivision Codes: Design

- Conventional zonings intent:
- -limit height & density
- -segregate uses
- -require setbacks
- -provide ample free parking
- Starting to be addressed well in form-based codes
- Solution: To provide assurance to developers and reduce risk:
 - -Codes must allow transit-oriented development AS OF RIGHT



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8. Zoning Code: Parking Requirements

- Continued over-reliance on ITE *Parking Generation Manual*. Use this only for isolated, auto-oriented uses.
- Requirements often set 50-100% higher than average demand seen in Parking Generation manual.
- Strategies
 - -Adjust based upon local conditions
 - -Incentivize parking strategies to reduce traffic and improve design
 - -Abolish minimums
 - -Establish maximums
- Examples...

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Tailored Parking: Palo Alto



- <u>Existing Requirement:</u> 4.0 spaces per 1000 s.f.
- Need 5,744 spaces above observed demand to bring all downtown to 4.0 standard. At \$51K/space, \$293 million
- <u>Downtown, Observed peak:1.9</u>
 spaces per 1000 s.f.
- Palo Alto updating its zoning code to vary parking requirements by
 - Density
 - Transit Access
 - Income
 - Household size

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Incentivized Parking



- · Strategies to reduce parking demand:
 - Pricing
 - Unbundling
 - Car-Sharing
 - Other demand management (e.g. EcoPasses)
- Strategies to reduce parking impacts:
 - Shared parking
 - Structured parking
 - Stacked parking/parking lifts
 - Design requirements (e.g. wrap parking in active uses)

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Incentivized Parking: Boulder





- Downtown developers discouraged from building parking
- Instead, they pay a parking and transportation in lieu fee
- Fees used to build well managed public garages – and fund transit, bicycle and pedestrian improvements
- Program managed by downtown Business Improvement District, CAGID

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Constrain Parking Supply



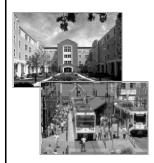
- Overall principle: encourage less auto-oriented development
- Promotes self-selection residents with fewer cars live close to transit
- Different approaches:
 - Parking maximums
 - Requirements/incentives for demand management
- Needs to be complemented with Residential Permit Parking or other strategies to stop overspill

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Parking Maximums



- Promote alternatives to the private automobile
- Can tackle congestion if related to roadway capacity or mode shift goals
- Maximize land area for other
 uses
- Appropriate in areas with strong real estate market where priority is to minimize auto dependence
- Examples: downtown San Francisco, Portland, Cambridge

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Parking: High & Low Traffic Strategies

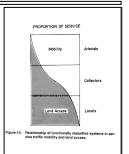
	Typical Minimum Requirements	'Tailored Minimum Requirements	Abolish Minimum Requirements	Set Maximum. Requirements
Typical Tools	Requirement > Average Demand Hide all parking costs	Adjust for: Density Transit Mixed Use Park Once' District On-street spacesetc.	Market decides Garages funded by parking revenues Manage on- street parking Residential pkg permits allowed by vote	Limit parking to road capacity Manage on-street parking Market rate fees encouraged/ required
Traffic	High -			Low
Housing Costs	High			Low
Pollution	High -			Low

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9. Street Design Codes

- AASHTO Green Book: NOT a standard, fairly flexible
- But state DOT manuals often adopt largest dimensions in *Green Book*
- Major confusion between California Highway Design Manual and local street codes.
- Highway Design: Safe for high-speed rural roads where few pedestrians are present. Accommodates "driver error."
- Urban streets: Accommodating fast auto speeds creates danger for everyone.
- Arterial/Collector/Local framework no place for main streets or boulevards



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A Legal Highway



The Esplanade, Chico, CA: Safe, Beloved and Illegal



The Esplanade, Chico, CA: Safe, Beloved and Illegal	
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9. Street Design Codes - Solutions	
ITE *Traditional Neighborhood Street Design Guidelines – A Recommended Practice*	
ITE "Traffic Calming: State of the Practice" – its standards directly challenge/ contradict old practices	
Vermont – New flexible state standards invite departures from AASHTO, senior agency engineers transferred	
Maryland – dumped state standards, reverted to <i>Green Book</i>	
Useful Articles: "From Highway to My Way" http://www.its.berkeley.edu/techtransfer/resources/newsletter/01spring/myway.html http://sser.gru.net/domz/main.htm	
http://www.citebc.ca/Nov97_Asphalt.html Nelkruni Nyqaprii Breaking the Code: 12 Obstacles to Smart Growth	
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9. Street Design Codes - Solutions	
Context Sensitive Design Solutions for Major Urban Thoroughfares. Congress	
for the New Urbanism, Institute for Transportation Engineers, Federal Highway Administration, US EPA	
-Due in March, 2006	

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10. Street Typologies and Performance Measures

- · Definitions buried in code language part of the problem, particularly "arterial,"
 "collector," "local" suburban classifications that only describe the auto flow function of streets.
- · Seattle's proposed new street typologies include:
 - -Priority for each mode
 - -Urban context
 - -Physical form



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10. Proposed Typologies

- Start with urban context:
 - -Urban Center
 - -Urban Village Center
 - -Urban Village
 - -Single-Family Residential Neighborhood
 - -Manufacturing/ Industrial Centers



10. Proposed Typologies

- · Add Transit layer
 - -1st priority transit network
 - -2nd priority transit network
 - -3rd priority transit network



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10. Proposed Typologies

- · Add automobile layer:
 - -1st priority auto network: freeways and major arterials
 - -2nd priority auto network: arterials and collectors
 - -3rd priority auto network: "local" streets



10. Proposed Typologies

- · Add bicycle layer
 - -1st priority bike network
 - -2nd priority bike network



10. Proposed Typologies

- · Can also add:
 - -Pedestrians
 - -Freight
 - -Environmental priorities
 - -Special place types
- Result: Shorthand classification code that addresses both the context and full function of every street:
 - -Broadway: $C_{UC}T_2A_2P_1$
 - -Aurora: C_{UV}T₂A₁

Classification	Shorthand
CONTEXT	
Urban Core and Urban Center main streets	cuc
Commercial streets in Hub and Residential Urban villages	c _{cs}
Hub urban villages and residential urban villages	Cuv
Single family residential areas	C _{SF}
Manufacturing/ Industrial Centers	C _{M1}
TRANSIT ROLE	
UVTN (Primary Transit)	Т1
Secondary Transit	T ₂
Tertiary Transit	T ₃
AUTO	
Primary Auto	A ₁
Secondary Auto	A ₂
Tertiary Auto	A ₃
BICYCLE	
Primary Bicycle	В1
Secondary Bicycle	B ₂
PEDESTRIAN	
Primary Pedestrian	P ₁
Secondary Pedestrian	P ₂
TRUCK	
Primary Truck ('Heavy Vehicle')	Н1

lassification	Shorthand
ONTEXT	
rban Core and Urban Center nain streets	Cuc
ommercial streets in Hub and esidential Urban villages	c _{cs}
lub urban villages and residential rban villages	Cuv
ingle family residential areas	C _{SF}
lanufacturing/ Industrial enters	C _{M1}
RANSIT ROLE	
VTN (Primary Transit)	Т,
econdary Transit	T ₂
ertiary Transit	T ₃
ито	,
rimary Auto	A ₁
econdary Auto	A ₂
ertiary Auto	A ₃
ICYCLE	
rimary Bicycle	В1
econdary Bicycle	B ₂
EDESTRIAN	
rimary Pedestrian	P ₁
econdary Pedestrian	P ₂
RUCK	,
rimary Truck ('Heavy Vehicle')	Н1

10. Seattle Proposed Performance Measures Appropriate typologies allow for performance measures that balance all modes. *Quality* of Service rather than *Level* of Service. **Application** • Broadway $C_{UC}T_2A_2P_1$ FUNCTION CONTEXT ZONE Minimum | Desirable | Preferred Measured Transit -0.8 Urban Center Village =-0.5 Secondary Auto Secondary Urban Center Village <1.2 <0.8 >0.6 Pedestrian II. В Urban Center Village Primary Breaking the Code: 12 Obstacles to Smart Growth Jeffrey Tumlin, Nelson\Nygaard Consulting Neison Mygaard <u>Application</u> • Broadway $C_{UC}T_2A_2P_1$ FUNCTION CONTEXT ZONE Minimum Desirable Preferred Measured -0.5 Transit Urban Center Village Auto Secondary Urban Center Village <1.2 <0.8 >0.6 Pedestrian Primary Urban Center Village Result: OK to slightly degrade auto QOS to improve transit and pedestrian QOS. Signal prioritization OK, but not dedicated transit lane. • Goal: Bring all measures into balance

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11. Impact Fees

- · Powerful tool for encouraging good development, discouraging bad development and raising funds for Smart Growth improvements
- · Problems with some fees:
 - -Raise money only for roadway widening and traffic "improvements"
 - -Base impact calculation on square footage, not auto trips. No discount for good location or TDM

San Joaquin County Impact Fee

- Based on forecast NOx and PM10 emissions
- Requires developers to reduce NOx emissions by 33% and PM10 by 50% or pay fee for off-site mitigation.
- Grants substantial reductions for density, transit accessibility, pedestrian connectivity, as calculated by URBEMIS www.urbemis.com
- Baseline fee of ~\$780 per home doubles in later years.
- See http://www.valleyair.org/Recent_ne ws/News_Clippings/RIs%20ISR%20 approved%2012-15-05.pdf
- or http://www.valleyair.org/rules/curr ntrules/Rule%209510%201205.pdf

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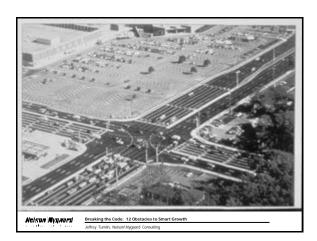
12. Environmental Compliance

What does a "mitigation measure" for environmental impacts look like?

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-		





12. Environmental Compliance

- In NEPA, more parking, wider roads and less density always result in better environmental compliance!
- Why is parking availability considered an "environmental impact" of statewide concern?
- Regional impacts are not considered, so greenfield sprawl easier to do than infill
- Obsessive focus on Auto LOS seconds of delay for cars – with little interest in other modes or in person delay or person capacity.
- Forces "worst case scenario" analysis, often with same auto trip rates for TOD as for sprawl.
- Induced trips rarely considered roadway widenings "improve" air quality!
- Minor bike lane projects often require expensive, timeconsuming environmental review – costing more than the project itself.

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12. Environmental Compliance – California Approach California Resources Agency State CEQA Guidelines allow local jurisdictions to set own screening criteria, significance thresholds and impact methodologies. · All cities can: -Set multimodal standards -Examine person delay rather than vehicle delay -Say they don't care about congestion in certain areas (like downtown Livermore) or citywide, or vary significance thresholds -Identify overriding considerations for when it's OK to have poor LOS Breaking the Code: 12 Obstacles to Smart Growth Neison Mygaard 12. Environmental Compliance: California Approach · California Assembly Bill 1387: Allows downtown housing projects without analyzing traffic impacts if they comply with city's zoning and growth plans. California State Bill 832: Exempts projects <10 acres, <300 homes in cities with >200,000 residents from CEQA. • California State Bill 948: Allows home builders to prepare a short-form environmental impact report rather than expensive full-blown report for residential projects. Association of Bay Area Governments starting to address: http://www.abag.ca.gov/planning/smartgrowth/sessions.html Breaking the Code: 12 Obstacles to Smart Growth Nelson Mygaard 12. Environmental Compliance: Oregon Approach Each of Oregon's 241 cities is surrounded by an "urban growth boundary" or "UGB." • Drawing an urban growth boundary is a joint effort. The city, adjoining county, special districts and citizens draw a UGB. The state's Land Conservation and Development Commission (LCDC) reviews it to make sure it is consistent with Goal 14. Goal 14 is the statewide planning goal adopted by LCDC on December 27, 1974. It requires each city to adopt a UGB, "in a cooperative process between a city and the county or counties that surround it." The goal lists seven "factors" that must be considered in drawing the UGB. Oregon's 15 years of experience have shown urban growth boundaries to be highly effective. UGBs have helped to reduce costs of public services and facilities, saved farmland from urban sprawl and have led to better coordination of city and county land-use planning. Reference: Department of Land Conservation and Development (DLCD), http://darkwing.uoregon.edu/~pppm/landuse/UGB.html NEISTIN TYPERATED Breaking the Code: 12 Obstacles to Smart Growth

For More Information • Contact: Jeffrey Tumlin, Principal Nelson Nygaard Transportation Planning for Livable Communities 785 Market Street, Suite 1300 San Francisco, CA 94103 415-284-1544 415-284-1544 115-284-1549 Jiumlin@nelsonnygaard.com www.nelsonnygaard.com www.nelsonnygaard.com San Francisco, New York, Portland, Boston, Deriver Mickini Plypaprid Bireaking the Code: 12 Obstacles to Smart Growth Jeffrey Turnin, Nelson/Nygaard Corouling