中国城镇化面临的资源环境问题 与城市可持续发展思路

The Resources and Environmental Issues in Urbanization and the Sustainable Development Ideas of Cities in China

建设部副部长 中国城市科学研究会理事长 Vice Minister of Construction Chairman of Chinese Society For Urban Studies

仇保兴博士 2007年11月15日 Dr. QiuBaoxing NOV.15 2007

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主要内容

- 中国的城镇化:进程与趋势
- 中国的资源环境与城镇化:基础 与挑战
- 中国城市可持续发展:现状与发展展思路

Main contents

- Urbanization in China: process and trends
- Resources and environment vs. urbanization in China: basis and challenge
- idea of urban sustainable development in China: actuality and development ideas

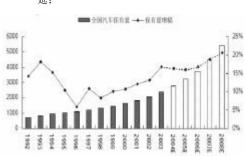
Urban Sustainable Development in china: Actuality and Development Ideas

- 1. 中国城市可持续发展面临的问题
 - 城市交通拥堵

机动化与城镇化重合,私人小汽车以每年30%的幅度增长;

交通拥堵已从特大城市向大中城市蔓延;

- 1. The problems of urban sustainable development in China
 - City traffic jams





中国城市可持续发展:现状与发展思路

Urban Sustainable Development in China: Actuality and Development Ideas

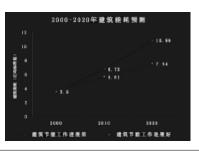
- 1. 中国城市可持续发展面临的问题
 - 城市发展中节能节地任务艰巨

每年城镇化率提高1个百分点,18 亿亩耕地保护底线任务艰巨;

建筑能耗每年上升几个百分点, 节能任务约占"十一五"节能 总目标的40%。

- 1. The problems of urban sustainable development in China
- Saving energy is an arduous task in urban development





Urban Sustainable Development in China: Actuality and Development Ideas

- 2. 中国城市可持续发展的思路
- 2. Sustainable development ideas of urban in China
 - 法规保障 Legal guarantee

1989.12 《城市规划法》:

- 第十四条编制城市规划应当注意保护和改善城市生态环境,防止污染和 其他公害,加强城市绿化建设和市容环境卫生建设,保护历史文化遗 产、城市传统风貌、地方特色和自然景观。……
- 第十五条 ……。编制城市规划应当符合城市防火、防爆、抗震、防洪、防泥石流和治安、交通管理、人民防空建设等要求;在可能发生强烈地震和严重洪水灾害的地区,必须在规划中采取相应的抗震、防洪措施。
- 第十六条 编制城市规划应当贯彻合理用地、节约用地的原则。

中国城市可持续发展:现状与发展思路

Urban Sustainable Development in China: Actuality and Development Ideas



- 2. 中国城市可持续发展的思路
- 2. Sustainable development ideas of urban in China
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2007. 10《城乡规划法》

- 第一条 为了加强城乡规划管理,协调城乡空间布局,改善人居环境,促进城乡 经济社会全面协调可持续发展,制定本法。
- 第四条 制定和实施城乡规划,应当遵循城乡统筹、合理布局、节约土地、集约 发展和先规划后建设的原则,改善生态环境,促进资源、能源节约和综合利用, 保护耕地等自然资源和历史文化遗产,保持地方特色、民族特色和传统风貌,防 止污染和其他公害,并符合区域人口发展、国防建设、防灾减灾和公共卫生、公 共安全的需要。

在规划区内进行建设活动,应当遵守土地管理、自然资源和环境保护等法律、法规的规定。



Urban Sustainable Development in China: Actuality and Development Ideas

- 2. 中国城市可持续发展的思路
- 2. Sustainable development ideas of urban in China
 - 法规保障 Legal guarantee 《可再生能源法》、《建筑节能条例》将出台

中国城市可持续发展:现状与发展思路



Urban Sustainable Development in China: Actuality and Development Ideas

- 2. 中国城市可持续发展的思路
- 2. Sustainable development ideas of urban in China
 - 政策保障 Security policy
 - 主体功能区关于区域发展的战略定位
 - ①区域开发的总体定位
 - ②产业发展战略定位
 - ③土地利用战略定位
 - ④能源利用与环境保护战略定位,明确确定四类开发地区:
 - 优化开发区域
 - ✓ 重点开发区域
 - √ 限制开发区域
 - ✓ 禁止开发区域



- 2. 中国城市可持续发展的思路
- 2. Sustainable development ideas of urban in China
 - 政策保障 Security policy
 - 逐步完善城市规划的公共政策引导作用
 - > 我国的城乡规划体系包括:

省域城镇体系规划、分片城市群规划、城市总体规划(含市、县〈市〉域总体规划)、分区规划、详细规划和镇规划,以及相应层次的专项规划。

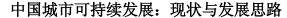
▶ 近年来正在从规划编制、实施等各个角度强化规划的公共政策属性 和作用。

中国城市可持续发展:现状与发展思路

Urban Sustainable Development in China: Actuality and Development Ideas



- 2. 中国城市可持续发展的思路
- 2. Sustainable development ideas of urban in China
 - 技术保障 Technical support
 - 逐步加大生态城市规划的技术研究和推广力度 好的生态规划不等于生态规划与城市规划的简单叠 加,需要有机的整合。



Urban Sustainable Development in China: Actuality and Development Ideas

- 2. 中国城市可持续发展的思路
- 2. Sustainable development ideas of urban in China
 - 技术保障 Technical support
 - 引进城市交通TOD、BRT技术政策, 注重高效节能



不要步美国城市盲目修建高架桥的后尘

中国城市可持续发展: 现状与发展思路 Urban Sustainable Development in China: Actuality and Development Ideas



- 2. 中国城市可持续发展的思路
- 2. Sustainable development ideas of urban in China
 - 技术保障 Technical support
 - 加大研究和推广绿色建筑和建筑节能技术
 - ➢ 采取政府督管十市场的方式,同时,逐步健全第三方认证、奖励、惩罚机制
 - ▶避免高科技、高投资的发展思路,避免简单"向发达国家 靠拢",避免示范、展示和技术、产品堆砌;鼓励低成本 发展道路,鼓励技术和建筑的有机集成



- 2. 中国城市可持续发展的思路
- 2. Sustainable development ideas of urban in China
 - 技术保障 Technical support
 - 完善规划环评工作

以近期规划为主,根据区域资源、环境承载力,重点分析制约城市发展的资源、环境因素,以及对区域资源、环境 有较大影响的规划内容。

中国城市可持续发展: 现状与发展思路 Urban Sustainable Development in China: Actuality and Development Ideas



- 2. 中国城市可持续发展的思路
- 2. Sustainable development ideas of urban in China
 - 体制保障 System security
 - 强化中央对地方在空间发展管理上的宏观调控
 - 强化公众参与,发展多元化社会治理模式
 - 把可持续发展纳入地方和城市政府绩效考核体系

2007城市可持续发展国际市长高层论坛 2007 International Mayors' Forum on Sustainable Urban Development 加强北京城市建设节约用地管理 建设资源 节约型、环境友好型城市

Strengthening conservation land management and construction of resourcesaving and environmentally-friendly cities in Beijing

> 北京市规划委员会 曹跃进 2007年11月15日 Cao Yuejing, Beijing Planning Committee November 15, 2007

工作内容	Contents
一、工作背景和目标 二、工作重点内容 三、节地指标和实例 四、实施和管理办法 五、下一步工作	 1. Work background and objectives 2. Focus on content 3. Examples of indicators 4. Implementation and management methods 5. Next steps

胡锦涛总书记在党的十七大报告中明确指出:"坚持节约资源和保护环境的基本国策,关系人民群众切身利益和中华民族生存发展。必须把建设资源节约型、环境友好型社会放在工业化现代化发展战略的突出位置...要完善有利于节约能源资源和保护生态环境的法律和政策,加快形成可持续发展体制机制。"

温家宝总理在十届全国人大五次会议上作政府工作报告时强调:"节约集约用地,不仅关系当前经济社会发展,而且关系国家长远利益和民族生存根基。要抓紧完善和严格执行节约集约用地标准,包括农村集体建设用地和宅基地,都要控制增量,盘活存量,提高土地利用效率和集约化程度。"

Hu Jintao, general secretary of the party's 17th Congress, pointed out: "We should be adhering to the conservation of resources and the basic national policy of protecting the environment, and the people's vital interests and the survival and development of the Chinese nation. We need to build a resource-saving and environment-friendly society in the industrialized modern development strategy in a prominent position to improve... to save energy resources and protect the ecological environment laws and policies, accelerate the creation of institutional mechanisms for sustainable development."

Premier Wen Jiabao at the Fifth Session of the Tenth National People's Congress for the government work report stressed: "There is an intensive use of land conservation, not only the current economic and social development, and relations between the country's long-term interests and the foundation for national survival. We must pay close attention to improving and strictly implementing intensive conservation land standards, including rural collective construction land and house should be incremental control, and make the stock and improve land-use efficiency and intensity level."

《北京城市总体规划(2004年-2020年)》要求: "坚持节约优先,积极推进资源的节约与合理利用,严格控制城镇建设用地规模,把北京建成节约型城市,保障北京市可持续发展"成为城市建设的重点,加快建设"资源节约型、环境友好型社会"成为北京一项重要的战略任务。

《北京市土地利用总体规划(1997-2010)》强调土地是人类赖以生存和发展的基础,"十分珍惜、合理利用土地和切实保护耕地"是我国的基本国策,并提出了开发与节约并举,以节约为主,努力提高土地利用效率的原则和方针。

"Beijing City Master Plan" (2004 -2020), asked: "Adhering to give top priority to conservation, and actively promote resource conservation and rational utilization, and strictly control the scale of urban construction sites, Beijing completed a conservation-oriented cities, Beijing protection sustainable development" become the focus of urban construction, speed up the building of "a resource-saving and environment-friendly society" has become Beijing an important strategic task.

"Beijing overall land use planning" (1997-2010), stressed that the land is for mankind's survival and development of the foundation, and "treasure, and rational use of land and effectively protect farmland" is China's basic national policy, and made both development and conservation, mainly to conserve, and strive to improve the efficiency of land use principles and guidelines.

为贯彻国务院节能减排有关工作精神,落实北京城市总体规划和北京市土地利用总体规划,加快建设资源节约型、环境友好型社会,促进城市经济结构调整,转变城市经济增长方式,实现城市经济又好又快发展,推进城市建设用地高效集约和合理利用,加强和规范本市城市建设用地节约管理,北京市规划委员会和国土资源局组织开展了《关于加强北京市城市建设节约用地管理的若干规定》和《北京市城市建设节约用地指标》的制定和研究工作。

To implement the State Council's reduction of the energy-saving work of the spirit of the overall implementation of Beijing urban planning and land use planning in Beijing to speed up construction of a resource-saving and environment-friendly society, and promoting urban economic restructuring, changing the mode of economic growth cities, the urban economy, and they good fast development, and advancing urban construction land intensive and rational use of efficient, strengthen and standardize the city urban construction land conservation management, and the Beijing Municipal Planning Commission and the Land and Resources Bureau carried out "on the strengthening of the Beijing Urban Construction saving a number of regulations on land management "and the" Beijing Urban Construction conservation land targets "in the formulation and research work.

一、工作背景和目标

1. Work Objective & Background

1. 政策法规

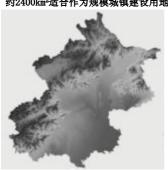
- 2007年以来,中共中央、国务院相继发布《关于进一步严格控制党政机关办公楼等楼堂馆所建设问题的通知》、《关于印发节能减排综合性工作方案的通知》(国发[2007]15号)等重要文件,针对当前中国经济高速发展形势下所面临的环境、污染、资源、廉政等问题,提出了相关要求。
- 2007年4月,市政府批准的市发改委《加快发展循环经济建设资源节约型和环境友好型城市2007年行动计划》中也提出"有计划地系统研究和修订我市建设项目用地标准,探索实施建设项目用地标准的管理,集约利用开发区土地"。
- 2007年10月,十届全国人大常委会第三十次会议表决通过《节约能源法》,明确规定: "节约资源是我国的基本国策。国家实施节约与开发并举、把节约放在首位的能源发展战略。"

1. Policies and regulations

- Since 2007, the CPC Central Committee and the State Council have issued "strict control on further building the party and government organs, such as building Loutangguansuo notice", "on the issuance of a comprehensive energy reduction programme of work notice" (State of the [2007] 15) and other important documents, in view of the rapid development of China's current economic situation faced by the environment, pollution, resources, and the Independent Commission Against Corruption and other issues, and put forth relevant requirements.
- April 2007, the municipal government approved by the City Development and Reform Commission to "speed up the development of recycling economy construction of a resource-saving and environment-friendly cities in 2007 Action Plan" proposed "system in a planned way and revised standards for city construction projects, explore the implementation of construction projects for the management of standard and intensive land use zone."
- October 2007, the 10th NPC Standing Committee at the 30th meeting of the vote through "energy conservation law," clearly states: "conservation of resources is China's basic national policy. National implementation of both conservation and development, giving priority to energy conservation development strategy."

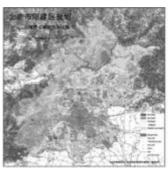
一、工作背景和目标

- 2. 目前城市建设用地中存在的问题
 - (1)北京城市经济持续稳定增长,人口、资源和环境压力增大。
 - ■经济持续稳定增长,常住人口已超过 1500万人;
 - ■出于生态安全和环境保护的战略考虑, 林地、耕地、水面等必须保持必要 的规模;
 - ■辖区面积中山区占62%,平原部分仅有约2400km²适合作为规模城镇建设用地。



1. Work Objective & Background

- 2. Current urban construction land in the existing problems
- Beijing city sustained and stable economic growth, population, resources and environmental pressures increase.
- Sustained and stable economic growth, the resident population has more than 15 million people;
- For ecological security and environmental protection of strategic considerations, woodland, arable land, water and other necessary must be maintained.
- The scale; Area in the mountain area of 62 per cent, plain about 2400 km2 only part of a suitable scale urban construction sites.



一、工作背景和目标

1. Work Objective & Background

- (2)目前城市快速发展过程中,一方面中心城有功能 过度集中的问题,另一方面还大量存在土地浪 费的情况。
 - 以低价土地吸引投资,大量圈占土地,土地使用强度低,如部分工业、物流、仓储用地等;
 - 公用设施、基础设施以各自行业标准要 地,粗放式建设管理,部分公共设施的用 地和房屋被挪作他用。
 - (普遍问题: 经营性土地需要适当控制使用强度;
 - 非经营性土地需要适当提高使用强度.)

- (2) The rapid development of cities in the city centre on the one hand there are the excessive concentration of functions, also on the other hand there are a lot of wastage of land.
- Land at low prices to attract investment, a large number Juantie land, land-use low intensity, as some industrial, logistics, warehousing space;
- Utilities, infrastructure and standards in their respective industries, extensive construction management, and some public facilities and housing sites was been diverted to other purposes.
- (Common problems: operators need proper control of land use intensity;
- Non-operating land needs to increase the use of strength.)



一、工作背景和目标

(3) 用地指标中的问题

通过对现行各行各类用地标准和实例的分析, 主要问题如下:

■标准讨高

用地标准偏高,如部分市政、交通、公 共设施;

■标准讨时

用地标准需要根据社会经济发展和技术进步进行调整,很多公共设施和基础设施用地标准中包括大量生活服务内容,如高等教育用地中的教职工住宅、市政交通站点中的托幼、招待所等;

■标准过多

同一类设施存在多个用地标准,造成用 地管理工作的混乱,如给水设施、排水设施 等:

■标准缺失

很多设施缺少用地标准或规范,如行政 办公、科研设施、燃气设施、供热设施、环 卫场站、换乘中心、城市轨道交通设施等。

因此,应当将全国性的通用标准,结合地 方特点加以细化,有针对性的解决人口资源环 境突出矛盾。

1. Work Objective & Background

(3) the question of land indicators

Through the current visit of the standards and examples of various types of land analysis, the main problems are as follows:

High standards

- High standards sites, as some municipal services, transportation, public facilities;
- Standards need to outdated standards for socio-economic development and technological progress to adjust, many public facilities and infrastructure sites, including a large number of standards of life services, such as higher education faculty in the residential land, the municipal traffic site nurseries, guest houses etc.

Too many standards

 The same type of facilities there for a number of standards, causing confusion in the management of land, facilities such as water supply, drainage facilities;

Lack standard

- Many facilities lack of space standards or norms, such as administrative offices, research facilities, gas facilities, heating facilities, sanitation station, transfer center, urban rail transit facilities.
- Therefore, the GM should be national standards with local characteristics to be refined, targeted population, resources and environment to resolve outstanding contradictions.

一、工作背景和目标

3. 工作目标

(1) 从修订和完善节地标准开始 《北京市城市建设节约用地指标》

研究科学合理的、针对北京的节约用地 指标。

- 分析现行用地标准,研究比较其 他城市,找出标准方面的问题;
- 通过案例分析,兼顾实际情况和 发展预留,确定合理节地指标。
- (2)在用地管理环节加强落实

《关于加强北京市城市建设节约用地管理的若干规定》

要求各行各业都要节约用地,北京市规 划委和北京市国土局具体落实 实施节地 的管理工作

- 从严掌握新征占建设用地的规 模;
- 充分挖掘现有存量建设用地潜力。

1. Work Objective & Background

3. Targets

- (1) from section to revise and perfect the standard start
- "Beijing Urban Construction conservation land indicators"
- On scientific and reasonable, in view of Beijing's land conservation targets.
- Analysis of the existing space standards, comparative study of other cities to identify aspects of the standards;
- Through case studies, take into account the actual situation and development of reserved, to determine a reasonable indicator Festival.

(2) in part to strengthen the implementation of land management

- "Beijing Urban Construction on strengthening the management of land conservation certain provisions"
- Require businesses to make economical use of land, the Beijing Municipal Planning Commission and the Beijing Municipal Bureau of Homeland specific to the implementation of the implementation of the management of the festival
- Strictly control new construction land requisition, the scale of
- Fully tap the potential of the existing stock of land for construction purposes.

二、工作重点内容

1. 工作方法

- (1) 大量现状调查和实例分析
- ■分析现行标准和规范,对照研究国内外城市;
- ■统计现状和规划数据,分析 剖析典型实例。
- (2)分区域研究和确定节地标准

按旧城、中心城、中心城 外,以及基础设施条件等不同 区域,分别确定节约用地指 标。

2. Focus on Content

1. Working methods

- (1) a large number of examples of the investigation and the status quo
- Analysis of the existing standards and norms, controlled study at home and abroad city;
- Statistics status and planning data, analysis of typical examples.
- (2) sub-regional research and the identification of criteria
- According to the old city, the Centre City, outside the city centre, as well as infrastructure such as different regions, respectively deciding land conservation targets.

二、工作重点内容

2. 工作组织

(1) 政府组织, 多方参与

市规划委、市国土局共同组织,委托北京 市城市规划设计研究院为主要编制单位,清华 大学、北京工业大学、北京市地下铁道研究所 等等科研机构共同进行研究工作。

(2)征求意见,修改完善

2006年8月,组织召开了市政交通设施节约用 地规划设计指标专项专家评审会,并征求了北京 市水务局、市政管委、交通委、供电局等各专业 管理部门的意见,修改完善。

2007年8月,组织召开了居住、工作用地和公共服务设施节约用地指标专项论证会,市国土局、园林绿化局、教委、卫生局、消防局、邮政管理局、电信局等政府主管部门和专业部门提出书面意见,同时征求了部分区县政府,住总集团等开发建设单位,中国建筑设计研究院、北京市建筑设计研究院等设计单位,国管局、总后勤部等中央部队单位的意见,并与建设部规划司进行了沟通。

2. Focus on Content

2. Organization of work

(1) governmental organizations, multi-stakeholder

City Planning Commission, the bureau's organized jointly by the Beijing Municipal Urban Planning and Design Institute for the preparation of the main unit, Qinghua University, Beijing University of Technology, Beijing Institute of the Mass Transit Railway, and so on scientific research institutions to conduct in tresearch work.

(2) to solicit opinions, revise and improve the

- August 2006, the organization of municipal conservation land transport infrastructure planning and design expert assessment will be special targets, and to seek the Beijing Municipal Water Authority, the appointed municipal transport committee, Power Supply Bureau, and other departments on the professional management, revise and improve the.
- August 2007, the organization held a live, work sites and public service facilities and land conservation demonstration will be special targets, the Urban Land Bureau, Landscaping Bureau, the Board of Education, Health Bureau, Fire Services, the Postal Authority, the bureau and other government departments and professional departments submit written comments, the Government sought the views of some districts and counties, the group living units, such as development and construction, China Architecture Design Institute, Beijing Architecture Design Institute, and other design units, the State, the General Logistics Department and other central units of, with the Ministry of Construction and Planning Division has been communication.

二、工作重点内容

3. 两个重点内容

针对北京目前城市建设特点,以 需求量大、矛盾集中的用地为重 点,结合北京城市总体规划、土地 利用规划和各专项规划(如消防队 站规划、邮政设施规划、各个新城 市政交通专项规划)等已有的工作 基础, 重点研究这两种情况的节地 标准。

■需求量大:居住用地,工业用地... ■矛盾集中:公共服务,市政交通设施

2. Focus on Content

3. Two key content

- Beijing Urban Construction for the current characteristics of the high demand, and contradictions on the site, with the focus on Beijing with the overall urban planning, land use planning and special plans (such as fire brigade station planning, postal facilities planning, all municipal transport special Metro Planning), and so have been the basis for the work, the focus on these two sections of the criteria.
- Demand: The living space, industrial sites...
- Contradictions: Public services, municipal transport facilities...

二、工作重点内容

2. Focus on Content

4. 三类用地标准

- 居住工作用地
- 居住用地
- 一类居住用地
- 二类居住用地
- 经济适用房用地
- 工业用地 - 数工小用地
 - 高新技术产业用地
- 行政办公
- Living and working space
- Living space
- A living space Second-class living space
- Economic Housing sites
- Industrial land
- General industrial land Land high-tech industries
- Administrative

Category 3 of 6

公共服务设施用地 基础教育

托幼,小学,初中,高中,九 年一贯制学校

- 高等教育
- 医疗卫生
- 邮件处理场地,邮政局所 消防设施
- 特勤消防站,一级普通消防 站,二级普通消防站
- 应急避难场所

紧急避难场所,固定避难场所

- Public service area
- Basic education
- Nurseries, primary, junior high school, high school and the school system has been nine years
- Higher Education
- Health
- Postal facilities
- Mail processing site, the Post Office Fire facilities
- Secret fire stations, an ordinary fire stations, two ordinary fire station Emergency Evacuation sites
- Emergency Evacuation sites, fixed

- 4. Three standard sites 市政交通设施用地
 - 供水设施 水厂,给水泵站
 - 排水设施 污水处理厂,泵站等 供由设施 220KV、110KV 李由站
 - 燃气设施 天然气门站、储配站等
 - 供热设施 燃煤、燃气供热厂等
 - 环卫设施 生活垃圾转运站
 - 请信设施 由信局所、基站等
 - 公共交通场站 枢纽站中心站等
 - 公路交通场站
 - 高速公路收费站、养护设施、服务设施、交警驻地、 检查站等
 - 轨道交通设施
 - 加油站
 - Municipal land transport facilities Waterworks water supply facilities, water pumping stations Drainage facilities sewage treatment plants, pumping

 - 220KV electricity supply facilities, 110KV Substation
 Gas Station gas facilities, storage and distribution station,

 - Heat coal-fired, gas heating plants, etc.
 Sanitation garbage transfer station
 Communication facilities by the bureau, such as base
 - stations Public transport station hub station hubs, etc.
 - Highway traffic station
 - Highway toll station, conservation facilities, services and facilities, traffic police resident, checkpoints, etc.
 Rail transport facilities 11类35项

3类6项

二、工作重点内容

2. Focus on Content

5. 四种节地方式

城市建设节约用地,是指在满足基本功能的前提下 对建设用地的合理使用,不仅仅是减少建设用地的 数量,节地的主要方式包括:

■ 节省用地:

通过合理布局、改进工艺等手段,在满足设施正常使用和安全要求的前提下,对建设用地标准规模进行压缩,如很多市政交通设施用地等;

■ 调整容量:

在满足设施正常使用和环境交通安全要求的前提下,以保证建筑规模为基本要求,适当调整容积率指标,提高土地利用效率,如工业、仓储用地;基础教育、高等教育用地;医疗卫生用地等;

■ 综合利田

根据部分设施的特点,在满足设施正常使用和安全 要求的前提下,将某些设施合并设置,共用建筑或 用地,如避难场所、电信局所、邮政设施用地等。

■ 优化套型:

在保障配套服务设施、环境质量和交通要求的前提下,通过优化住宅的套型结构,适当提高用地可承载人口容量,调整居住人口密度,提高土地使用效率,如居住用地:

5 Four sections manner

Urban construction economical use of land and means to meet basic function on the premise of the rational use of land for building, not just to reduce the number of construction sites, and land is the main mode include:

Space saving:

Through rational distribution, improve technology and other means to meet the normal use of facilities and safety requirements under the premise of land for the construction of the scale of compression standards, such as the many municipal land transport facilities;

Adjustment capacity:

In the normal use of facilities to meet safety and environmental requirements of the premise, in order to ensure the basic requirements for building size, appropriate adjustments volume indicators and improve the efficiency of land use, such as industrial, warehousing space; basic education, higher education sites such as medical and health sites:

Comprehensive Utilization:

According to the characteristics of some of the facilities in the normal use and facilities to meet safety requirements under the premise of the merger will be set up some facilities, the sharing of buildings or land, such as emergency evacuation areas, the bureau, postal facilities sites.

■ Optimization TYPE:

The protection of ancillary services and facilities, environmental quality and transportation requirements under the premise of residential dwelling size by optimizing the structure, to increase the population carrying capacity of land can be adjusted population density, improve efficiency in the use of land, such as residential land;

三、节地指标和实例 ---- 《北京市城市建设节约用地指标》

3. Land targets and examples-"Beijing urban construction conservation land indicators"

■ 居住和工作用地

通过分析现状数据及典型案例,对比上海、广州、深 圳等城市的资料,按中心城、中心城外和轨道站点周 边区域,确定居住和工作用地的容积率等指标。

■ Living and Working Spaces

By analyzing the data and the status quo of typical cases, as compared with Shanghai, Guangzhou, Shenzhen and other cities, according to the city centre, outside centre and the surrounding region track site to identify the living and working space volume rate, and other indicators

	现状问题	节地研究	节地措施
	Current Situation	Program Study	Program Measures
居住 用地 Living Space	需要进行分区域的 细化。 The need for the details of the subregion.	统计100个一类住宅和78个经济适用房住宅项目的有关数据,对20个住宅项目进行典型分析,提出套型标准、套密度、人口毛密度以及不同区域一二类住宅、经济适用住房的用地和容积率指标。 Statistics 100 a residential and economic application of the 78 residential projects of the relevant data, the 20 residential projects typical analysis, dwelling size standards, sets density, population density and different hair types residential area on January 2, and practical housing space and volume indicators.	增加小户型的比例,引导住房消费转向更加节约实用。 Increase the proportion of small-family, housing consumption guide to saving more practical.
工业 用地 Industrial Space	需要进行分区域的 细化。 The need for the details of the subregion.	统计了37个工业项目用地数据,分析了典型工业项目的用地指标,确定一般工业和高新技术产业用地的容积率指标。 Statistics from 37 industrial projects for data, analysis of a typical industrial projects land targets, determine general industrial and high-tech industries for the volume indicators	提高工业用地的土地使用强度和单位 用地指标上的产出。 Improve industrial sites in land-use intensity and land units on the output indicators.

3. Land targets and examples-"Beijing urban construction conservation land indicators"

■ 居住和工作用地

■ Living and Working Spaces

	现状问题	节地研究	节地措施
	Current Situation	Program Study	Program Measures
行政 办公 The Office	现行国标只涉及办 公用房的建筑标 准,蛛少相应的用 地标准。 GB only involves existing office space construction standards, the lack of standards for the corresponding.	统计分析中心城办公(行政、事业)用地控规指标,提出不同区域行政办公用地的容积率和用地指标。 Statistical Analysis Center City office (the cause) for regulatory control indicators, different regional administrative office space for the volume and rate indicators.	一般地区行政办公用地不得低于12 米,容积率不得低于1.0。 General district administration office space shall not be less than 12 meters, the volume ratio must not be less than 1.0.

节地指标和实例 ---- 《北京市城市建设节约用地指标》

3. Land targets and examples-"Beijing urban construction conservation land indicators"

■ 工业用地实例分析 >《工业項目建设用地控制指标(试行)》 国土资源部于2004年 11月1日发布实施

》《北京工业开发区工业用地规划控制指标的指导意见(暂行)》 (市规文[2004]1485号)

■ Examples of Industrial Land

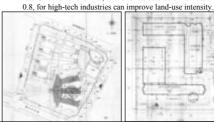
"Industrial projects for control indicators (draft)," Land and Natural Resources on November 1, 2004 implementation of release "Beijing Industrial Development Zone industrial land planning control indicators for guidance (Provisional)" (Urban Regulation [2004] 1485)

rate is not lower than 1.0, in the centre outside of not less than

《北京工业开发区工业用地规划控制指标的指导意见(暫行)》	北京市	≥0.8
(工业项目建设用地控制指标(试行))	国土资源 部	≥0.4~0.8
《上海产业用地指南》	上海市	≥0.6~1.5 (推荐值)
《探圳市高新技术产业带企业或项目入区审核与监管指导意见(试行)》	探圳市	≥1.5
《探圳市工业項目產设用地控制标准(试行)》	深圳市	一类地区≥1.0~2.2; 二类地区≥0.8~1.8。
《浙江省工业建设项目用地控制指标(试行)》 "Zhejiang industrial projects in land control indicators (Trial)"	浙江省	≥0.5~1.0
国际参考值 International Reference Values		0.25~1.1
		al sites), in the city centre volume

一般工业用地(产业用地),在中心城容积率不低于1.0,在中心城外不低于0.8,高新技术产业用地可提高土地使用强度。







3. Land targets and examples-"Beijing urban construction conservation land indicators"

■ 公共服务设施

针对各类公共服务设施的特点,参照现行专业标准,结合实际案例分析,按中心城、中心城外和轨道站点周边区域,采取适宜的节约用地方式,具体确定各类公共服务设施的用地指标。

■ Public Services and Facilities

Public services and facilities for all types of characteristics, in accordance with the current professional standards, with actual case studies, according to the city centre, outside centre, and track site surrounding region, to take appropriate conservation land, specify the range of public services and facilities sites indicators.

	现状问题	节地研究	节地措施
	Current Situation	Program Study	Program Measures
基础	标准未分区域,在旧域区和部分中心域地	统计中心城所有基础教育设施用地平均	根据区域和用地条件的不同,采取不同的节地技
	区难以落实。	值,分析36个中小学托幼校园实例。	标;
教育 Basic Education	Standards of the subregion, in the old city centre of the city and region can hardly be implemented.	Statistics Centre City all basic education facilities for the average of 36 primary and secondary school nurseries examples.	在保证主要功能和使用安全的前提下优先满足员 筑规模指标,适当提高土地使用强度。 建议:主管部门对"示范"和"达标"的要求不要 刀切,减少基层单位扩大用地的压力。
高等 教育 Higher Education	 标准未分区域; 各高校用地标准差距较大; 現行标准制定时间较早, 某些内容已不符合发展录来。 Standards of the subregion; All colleges and universities for a big gap between the standards; The current standard-setting time earlier, some of the elements that do not conform to requirements of the development. 	统计分析中心城和中心城外高等教育的平均容积率数值,研究对比了不同用地規模 校园的容积率指标。 Statistical Analysis Center City and the center of higher education outside the average volume of numerical study compared the different land-scale campus volume indicators.	According to the regional land and the different conditions, different sections and indicators; The main function in ensuring the safety and use of priority under the premise of the construction scale to meet targets to increase the intensity of land use. Recommendations: the competent departments of the "model" and "standards" requirement not across the board, reducing the pressure on land for expansion of the grassroots units.

三、节地指标和实例 ---- 《北京市城市建设节约用地指标》

3. Land targets and examples-"Beijing urban construction conservation land indicators"

■ 公共服务设施

■ Public Services and Facilities

	现状问题	节地研究	节地措施
	Current Situation	Program Study	Program Measures
医疗 卫生 Medical Health	> 标准未分区域; > 現行标准容积率较低,土地效率低; ■ 中心城地区部分医院建设过度集约; Standards of the subregion; Current standard rate of the lower volume, low efficiency of land; Center City building over some of the hospitals intensive;	分析中心城26个现状、改扩建和新建综合 医院的用地和建筑指标,对比现行有关规 范指标。 Analysis Centre City 26 status quo, expansion and new general hospitals and construction sites indicators, as compared with the relevant norms of the existing indicators.	

3. Land targets and examples-"Beijing urban construction conservation land indicators"

■ 公共	<u> </u>	Public services and facilities		
	现状问题	节地研究	节地措施	
	Current Situation	Program Study	Program Measures	
邮政 设施 Postal Facilities	 缺乏邮件处理场地用地标准; 存在邮政设施改作他用的现象。 The lack of venues for mail handling standards; There postal facilities for other use phenomenon. 	结合邮政设施专项规划,中心城新建562个邮政局所,其中邮政局约169个,均研究落实用地。 With special postal facilities planning, the new town centre by 562 post offices, of which about 169 post offices are to study and implement land.	中心城新建邮政局(所)均可不单独 占地,邮政所建筑面积200m²/处。 City Centre new post offices (which) may not separate land, the construction area of Post 200 m2 / Department.	
消防 设施 Fire Facilities	 > 标准未分区域,在旧城区和部分中心城地区难以落实。 > Standards of the subregion, in the old city centre of the city and region can hardly be implemented. 	结合消防专项规划,统计全市现状60个消防队站的用地情况,分析了15个位于不同地区的消防队站典型实例。 Special combination of fire planning, the city's status quo Statistics fire brigade at 60 sites, 15 of the different regions of the fire brigade station typical examples.	适当降低中心城一级普通消防站的用 地指标,提高容积率保证建筑指标要 求。 Appropriately lower the centre of the city an ordinary fire station site indicator, and volume rate guarantee construction indicator.	
应急 避难 场所 Emergency Evacuation Places		进一步强调了应避免将避难场所设置在建筑 倒塌范围内,以确保安全。 Further highlighted the need to avoid Evacuation sites set up within the framework of the building collapsed, to ensure safety.	均综合利用其他场地,如绿地、广 场、体育场、学校操场等,不另占 地。 Comprehensive Utilization of all other venues, such as the green square, sports, school playgrounds, not another area	

节地指标和实例 ---- 《北京市城市建设节约用地指标》

3. Land targets and examples-"Beijing urban construction conservation land indicators"

■ 消防设施实例

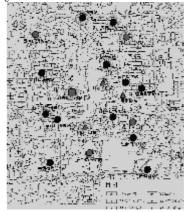






消防设施实例
■ Examples of Fire Departments
City Center and the Old City have an ordinary fire station,
according to the status quo does not have land to expand the 大用地的实际情况,适当提高其容积率,并鼓励消防队 actual situation, to increase its volume rate, and to encourage construction of fire brigade stations.

Retain the status quo in the Old City Fire Station 8, 旧城内消防站现状保留8个,规划增加12个。其中: 历 planning to increase 12. Of which: historical heritage conservation area to retain the status quo of four fire stations, planning new four.



3. Land targets and examples-"Beijing urban construction conservation land indicators"

■ 市政交通设施

针对各类市政交通设施的功能和技术要求,参 照现行专业标准,采取适宜的节约用地方式, 具体确定各类公共服务设施的用地指标。

■ Municipal Transport Facilities

Municipal transport facilities for all types of the functional and technical requirements, in accordance with the current professional standards, to the economical use of land suitable way to establish various types of public service facilities and land targets.

		targets.	
	现状问题	节地措施	节地效果
	Current Situation	Festival to Measures	Festival in Effect
供水 设施 Water Supply Facilities	原有标准较多, 选择范围较大。 《01规范》 《95标准》 《05指标》	通过典型设计、工艺对比分析以及不同区域的 场站类型选择,明确了选用指标《05指标》。 Through typical design, analysis and comparison of different regions of the station type choice, a clear choice indicator, "05 indicators."	在提高管理水平的情况下,在中心城地 区可节地20%左右。 Raise the level of management in the circumstances, in the centre of the city region to about 20 per cent.
污水 处理厂 Sewage Treatment Plant	More original standards, Larger scope of choices. "01 standardize"	通过典型设计、工艺对比分析以及不同区域的 场站类型选择,明确了选用指标(95标准)。 Through typical design, analysis and comparison of different regions of the station type choice, a clear choice indicator, "95 standards."	
排水 泵站 Drainage Pumping Station	"95 standard" "05 targets"	通过典型设计、工艺对比分析以及不同区域的 场站类型选择,明确了选用指标《01规范》。 Through typical design, analysis and comparison of different regions of the station type choice, a clear choice indicator, "01 norms."	

三、节地指标和实例 ---- 《北京市城市建设节约用地指标》

3. Land targets and examples-"Beijing urban construction conservation land indicators"

■市政交通设施

Municipal transport facilities

	现状问题	节地措施	节地效果
	Current Situation	Festival to Measures	Festival in Effect
供电 设施 Power Supply Facilities	原有指标比较宽泛,选择范围较大。 Comparison of the original broad indicators, larger scope of choices.	通过典型设计以及不同区域的 场站类型选择,明确了各类场 站的详细用地指标。 Through typical design, and field stations in different regions of the types of options, defined the various types of land for the station detailed indicators.	节约20%左右。 Savings of about 20 percent.

3. Land targets and examples-"Beijing urban construction conservation land indicators"

■市政交通设施

Municipal transport facilities

	现状问题	节地措施	节地效果
	Current Situation	Festival to Measures	Festival in Effect
燃气 设施 Gas Facilities	对场站用地没有要求,长期依靠 经验数据估算。 The station's site does not require long-term estimates rely on empirical data.	对各类场站依据不同的边界条件进行测算,制订了一套相对完整的指标体系。 Station on the basis of different types of boundary conditions forecast, developed a set of indicators of relative integrity of the system.	节约30%左右。 Savings of about 30 percent.
供热 设施 Heating Facilities	依靠经验数据,预留过多。 Rely on the empirical data, for too many.	结合技术进步做了调整。 Combining technological advances made adjustments.	节约40%左右。 Savings of about 40 percent.
通信 设施 Communicatio n Facilities	按千人指标落实,用地富裕,大 量挪作他用。 On the implementation of thousands indicators, rich land, a large number divert to other uses.	提出不独立占地,仅考虑建筑面积指标。 No independent land, only considered indicators of the construction area.	综合利用,不独立占地。 Comprehensive utilization, not independent areas
环卫 设施 Sanitation Facitilies	用地标准缺失。 Space standards deletion.	完善了指标体系。 Improve the system of indicators.	节约10%左右。 Savings of about 10 percent.

三、节地指标和实例 ---- 《北京市城市建设节约用地指标》

3. Land targets and examples-"Beijing urban construction conservation land indicators"

	现状问题	节地措施	节地效果
	Current Situation	Festival to Measures	Festival in Effect
公共交通场站 (包括枢纽站、换乘 中心、中心站、首末 站、保养场) Public transport station (Including hub stations, transfer Centre at the end of the first stations, field maintenance)	原有场站标准过时。 用地和房屋包含托幼、浴室等用房; 没有针对新要求如保安等用地的指标; 缺少关于中心站的用地标准。 The original station standards obsolete. Land and housing includes nurseries, bathrooms and other rooms; Not against new requirements such as security, and so on land targets; On the lack of standards for the central station.	①减少非业务用房(如托幼、浴室等),满足新增功能如换乘设施、保安用房等。 ②根据北京实际情况,明确中心站的用地 及建筑指标。 ③对各种交通场站完善补充了更加详细的 单项用地指标。 ① reduce non-business space (such as nurseries, bathrooms, etc.), meet new functions such as transfer facilities, security space; ② according to the actual situation of Beijing, clearly hub sites and construction indicators; ③ station of the various traffic perfect complement the more detailed indicators of individual sites.	节地10%左右。 Festival to about 10%.
公路交通场站 (包括收费站、 监控通信中心、养护 工区、高速路服务 区、客、货运站、交 警驻地及检查站等)	原有用地标准分项较多,每一项 均有独立占地指标。	①合并设置公路收费站、监控通信中心、 养护工区和高速公路服务区; ②细化完善了高速公路服务设施、客运站 和货运场站设施的用地指标; ③新增了以前标准缺失的交警驻地及检查 站设施用地指标。	节地10%~20%左右。

3. Land targets and examples-"Beijing urban construction conservation land indicators"

	现状问题 Current Situation	节地措施 Festival to Measures	节地效果 Festival in Effect
公路交通场站 (包括收费站、 监控通信中心、养护 工区、高速路服务 区、客、选运站、交 警驻地及检查站等) Highway traffic station (Including toll booth, Surveillance and communications centers, conservation work area, high-speed road services, passenger and freight stations, resident and police checkpoints, etc.)	原有用地标准分项较多,每一项均有独立占地指标。 At the original site of more standard, each one would have its own target area.	①合并设置公路收费站、监控通信中心、养护工区和高速公路服务区; ②细化完善了高速公路服务设施、客运站和货运场站设施的用地指标; ③新增了以前标准缺失的交警驻地及检查站设施用地指标。 ① merger set up highway toll stations, control and communications centers, highways and conservation area in services; ② thinning improve the highway facilities, passenger terminal and cargo space station facilities indicators; ③ new standards deletion of the previous resident of traffic police checkpoint facilities and land targets.	节地10%~20% 左右。 Festival to 10%~ 20%
城市轨道交通设施 Urban rail transport facilities	标准缺失,基本采用经验值。 Lack standards, a basic value of experience.	细化了车辆段和停车场(轨道交通车辆基地)占地指标。 Refinement of the depot and parking lot (the orbital vehicle base) covers an area of indicators.	比经验值节地10%左右。 Experience than the value of about 10%

三、节地指标和实例 ---- 《北京市城市建设节约用地指标》

3. Land targets and examples-"Beijing urban construction conservation land indicators"

	现状问题	节地措施	节地效果
	Current Situation	Festival to Measures	Festival in Effect
加油站 PFS	原有加油站标准是针对全国的规范,对分级和设施的安全距离进行了规定。 PFS is the original standard for the country's norms, the classification and the safety facilities has been stipulated.	针对不同地区(如旧城内)提出细化的用地和建筑指标。 Different areas (such as the Old City) Refinement of indicators and construction sites.	节地10%左右。 Festival to about 10%

3. Land targets and examples-"Beijing urban construction conservation land indicators" ► 污水处理厂实例分析 ■ Examples of Sewage Treatment Plants

节地分析

- 一般地区: 污水处理厂的用地按照《城市污水处理 工程项目建设标准》中的用地指标进行控制。
- 中心城地区: 用地指标按《城市污水处理工程项目 建设标准》中用地指标缩小10%进行控制。
- 今后随着污水排水水质的提高及中水回用力度的加 大,首先在存量上靠技术进步提供能力,同时规划 也考虑在污水处理厂周边要预留必要的备用地。



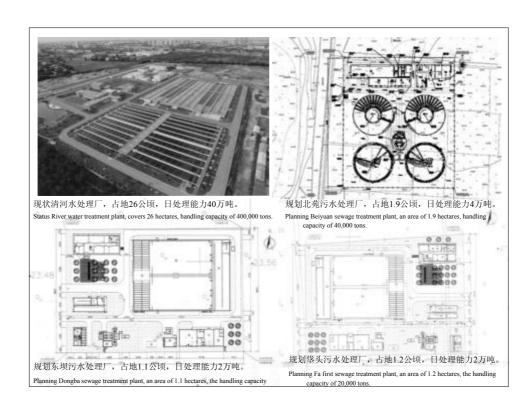
现状北小河污水处理厂,占地7公顷,日处理能力10万吨。 Status North river sewage treatment plant, an area of seven hectares, the handling capacity of 100,000 tons

Festival analysis

- General areas: land for a sewage treatment plant in accordance with the "urban sewage treatment project construction standards" in indicators for
- Center City: by land indicators "of urban sewage treatment project construction standards" in the narrow land targets $10\%\ control.$
- As the sewage drainage and improve the water quality of the water in increasing the degree of reuse, the first in the stock on the technological advances provided by the same time, planning is also considering a sewage treatment plant in neighboring necessary to set aside a reserve to



Status Gaobeidian sewage treatment plant, an area of 64 hectares, the handling capacity of 1 million tons.



3. Land targets and examples-"Beijing urban construction conservation land indicators" ▼ 污水处理厂实例分析 ■ Examples of Sewage Treatment Plants

北京市拟建污水处理厂规模与用地一览表 用地指标: 公顷/(万立方米/日)

Beijing scale of the proposed sewage treatment plant sites and sites list of indicators: ha / (million cubic metres / day)

	处理厂名称 Treatment Plant Name	处理能力 Handling Capacity (万M ³ /日)	处理工艺 Process	实际 用地 公顷 Actual Land Ha	《规范》 用地指标 "Norm" Space Indicators	《标准》 用地指标 Standard Space Indicators	实际 用地 指标 Actual Space Indicators
1	垡头污水处理厂(一期) Fa First Sewage Treatment Plant	2	C-TECH工艺	1. 17	1. 5	1. 11	0.6
2	东坝污水处理厂(一期) Dongba Sewage Treatment Plant	2	C-TECH工艺	1. 13	1.5	1. 11	0.6
3	北苑污水处理厂 Beiyuan Sewage Treatment Plant	4	AZENT-P	1.93	1. 25	0. 94	0. 5
4	順义后沙峪污水处理厂 Shunyihou Shaya Sewage Treatment Plant	4	氧化沟 Oxidation Ditch	2. 22	1. 25	0. 94	0. 55
5	平谷污水处理厂(一期) Pinggu Sewage Treatment Plant	8	氧化沟 Oxidation Ditch	4. 89	1. 02	0. 76	0.61

正在设计的污水处理厂用地指标已经采取更加节地的指标

四、实施管理办法----《关于加强北京市城市建设节约用地管理的若干规定》

- 4. Implementation of management practices "on the strengthening of the Beijing Urban Construction saving a number of
 - ② 为贯彻落实科学发展观,各行业主 管部门有责任研究整合现有的城市 建设用地, 节约使用土地资源;
 - 市规划委员会和市国土资源局具体 负责组织制定和落实本市城市建设 节约用地相关要求和规定:
 - 要求和规定制定各类各专项规划;
 - **1** 相关单位和个人应按照节约用地的 相关要求和规定进行各类相关建设 活动:
 - 图 应鼓励科学技术进步,通过新技术 手段改进工艺,促进土地资源综合 高效和节约集约使用。
 - 相关部门加强对城市建设节约用地 效能的监控和评价。

- To implement the scientific concept of development, the competent departments have the responsibility of industry consolidation on the existing urban construction land, economize on the use of land resources;
- City Planning Commission and City Council specifically responsible for the land and natural resources organizations to develop and implement conservation city urban construction sites related requirements and regulations;
- All relevant departments shall, in accordance with the relevant requirements of the economic use of land and provides for the making of all the special programming;
- Relevant units and individuals in accordance with the relevant requirements of the economic use of land and provides a variety of construction-related activities;
- Should encourage scientific and technological progress, by means of new technology to improve processes, promote efficient and integrated land resource conservation intensive use
- City Planning Board and the City's resources in the relevant departments to strengthen the economic use of land for urban construction effectiveness of the monitoring and evaluation

五、下一步工作

5. Next Steps

以上标准和规定已经市政府 审议原则同意,我们将进一步完 善深化并正式引发执行。今后, 我市将按照节地规定及指标进行 城市建设节约用地管理,指导本 市城市建设节约用地的规划制 定、实施以及相关建设活动,并 继续组织深化研究各类用地的节 约用地指标,将节地指标进一步 落实到城市建设的各个方面。

为切实贯彻落实科学发展 观,把北京建设成为资源节约型 和环境友好型城市,实现北京城 市全面协调可持续发展,我们将 不懈努力! Above the standards and regulations have agreed in principle to consider the city government, we will further improve and deepen the implementation of a formal trigger. The future, the city will be in accordance with the provisions of section indicators and economical use of land for urban construction management, guiding the city's urban construction land for conservation planning, implementation, as well as related construction activities, and continue to organize in-depth study of various types of land conservation land indicators will Festival and indicators to further implement the various aspects of urban construction

To effectively implement the scientific concept of development, the Beijing into a resource-saving and environment-friendly cities, Beijing city to achieve comprehensive, coordinated and sustainable development, we will spare no effort!

谢谢!

Thanks!

A Vision for Sustainable Cities

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可持续发展城市远景

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What is sustainable development?

- Definitions of sustainability generally have started with the Brundtland definition:
 - Meeting the needs of current generations without compromising the ability of future generations to meet their own needs
- But increasingly the definitions have broadened:
 - CO2 reductions are widely acknowledged as a primary indicator
 - Social, economic, and environmental dimensions are addressed

什么是可持续发 展?

- 可持续发展的定义通常最先是布伦特兰定义:
- 满足当代人的需求,而同时不损害满足后人需求的能力。
- 但是其定义已经逐渐扩展:
 - 普遍认为二氧化碳的减排是主要的指标
 - 也涉及社会,经济和环境状况

Sustainable development is...

- Development that improves that standard of living and quality of life,
- While at the same time protecting and enhancing the natural environment,
- Honoring local culture and history, and
- · Treating all people equitably.
- →Simultaneous achievement of high quality environment, a sound economy, and equity is key to sustainability

可持续发展应当...

- 提高生存标准和生活质量
- 与此同时,保护和加强自然环境
- 尊重当地文化和历史,以及
- 平等待人
- →可持续的关键:同步实现良好的 环境、稳健的经济和公平

How Can We Achieve Sustainable Development?

- Rejection of old arguments that equity can only be achieved by unfettered economic growth, or that to have economic development, environmental quality has to be sacrificed
- Specific implementation paths depend on context – no simple recipe for success
- Process matters partnerships and public participation are key elements
- Harmonization is key: consistent, mutually supportive policies for land development, transportation, environmental protection

我们如何实现 可持续发展?

- 有人认为公平就是靠不受约束的经济发展和牺牲环境质量达到的,这种陈旧的论点应该抛弃。
- 具体实施途径取决于具体环境成功没有单一的秘诀
- 具体实施中的关键点—— 伙伴关系和公众参与是决定因素
- 和谐是关键 即对土地发展,交通,环境保护 一致的,共同的支持政策

Sustainable Urban / Suburban Development Key Strategies

- Investment and reinvestment in existing districts and neighborhoods
- Preservation, renovation, re-use of existing structures that reflect history, culture
- Renewal at higher densities, especially near major transit
- · Infill; contiguous growth
- Mixed use, especially downtowns, centers
- Upgrade infrastructure: sewer, water, streets and highways, telecom, parks
- Upgrade services: schools, police, fire

可持续城市/郊区发展——关键策略

- 投资和再投资现有街区和居 民区
- 保护、翻修和重新使用有历史,文化价值的建筑
- 重建高密度区,特别是交通 主干道附近的高密度区
- 加密; 连续增长
- 土地混合使用,特别是城市商业区和城市中心
- 改善基础设施: 下水道、供应水、街道、公路、电讯和公园
- 改善公众服务: 学校、治安、防火

Sustainable transport is...

- Safe
- · High quality
- Accessible to all
- Affordable
- · Ecologically sound
- An asset to the community and region

可持续交通是...

- 安全
- 优质
- 人人均可享用
- 经济可承担
- 生态上无害
- 是社区和地区的一项 资产

Sustainable Transportation Strategies – Urban and Suburban Areas

- Sidewalk improvements surface quality, safe crossing designs, lighting, street trees
- Transit service improvements: timed transfers, schedule adherence, shelters, lighting, traveler information
- Transit-oriented development (TOD)
- Signal timing favoring person trips rather than vehicle movements (bus and pedestrian friendly)
- Keep streets in older areas well paved and clean!

可持续交通策略——城市和郊区地区

- 改进人行道的路面质量、 十字路口安全设计,交通灯 和路边植树
- 交通系统服务改进: 准点、 按时运行、车站环境、交通 灯和旅客信息
- 公交导向发展 (TOD)
- 信号配时优先考虑行人而非机动车辆(公交车辆和行人优先)
- 保持旧区道路铺设完好整齐

Sustainable Rural Development - Key Strategies

- Preservation, renewal of Main Streets and village centers
- Preservation of rural landscapes, views
- Agriculture and open space conservation
- Cluster development
- Economic development, job training to maintain, increase, diversify improve jobs
- Road ecology

可持续发展乡村 ——关键策略

- 保护,重建主要街道和 乡村中心
- 保护乡村景致和风景
- 保护农业和绿地
- 集群发展
- 经济发展,利用就业培训来维持、增加、区分和改进就业机会
- 道路生态

Transportation Strategies – Rural Areas

- Traffic calming upon entering towns - reduce speeds, increase comfort and convenience for local residents, businesses, pedestrians
- Sidewalks and bike lanes in town; walking trails, bike paths through the countryside
- Road location and design to take advantage of scenic vistas, historic sites, protect environmentally sensitive areas
- Road ecology wildlife crossings, native plants, stream restoration, culvert redesign, control of exotics

交通策略— 乡村地区

- 进入乡镇的交通需安静—减速,就可给当地居民、商业和行人更舒适的条件和更多的便利
- 乡镇的人行道和自行车道: 穿越乡村的步道和自行车道
- 道路位置的定位和设计要发 挥景致和名胜古迹特色,保 护环境敏感地区
- 道路生态——野生动物过 道、野生植物、河流的修 复、涵洞改型和控制外来物 种

What's Different About these Cases: Substance

- Recognition that land use, urban design, and transportation are intertwined and can't be treated as separate activities
 - failure to coordinate can lead to lost opportunities or even conflicts
- Transportation. land development – land use – re-use, environmental improvements are together "the project"

这些案例的区别: 实质

- 认可土地使用、城市设计和 交通是相互联系而不是独立 的行为
 - -协调不利可能导致机会丧 失甚至是冲突
- 交通运输。土地开发— 土地使用——重复使用和环境提高一同称为:"工程"

What's Different: Planning Processes

- Environmental quality, equity, economic development are fundamental objectives, not posthoc evaluation criteria
- Not just forecasting, but also back-casting to figure out how to get to a future that people want
- Focus on continuing improvement through a series of advances and achievements that add up to significant accomplishment (can be greatly aided by having a strategic plan and ongoing commitment to move it forward, update and improve it)
- Planning at multiple scales: regional, citywide, corridor, neighborhood
- Benchmarks and regular reports on progress

区别是哪里: 规划的程序

- 环境质量,公平和经济发展是基本的目标,不是事后评价标准
- 通过预测和回顾来思考如何达到人们所想要的未来
- 坚持持续得改善,通过一系列的改进和努力实现质变(辅以战略规划和行动推动其向前、进步和提高)
- 多层次规划: 地区、城市、街道、居民区
- 设定标准和不断报告分析进展

Planning and Urban Design: Putting Transport Investments in Context

- Need to find effective financing mechanisms has led to public-private partnerships: government and land developers working together
- Need for social, economic, and environmental sustainability – design with and for current and future residents and other members of the community

规划和城市设计: 在 具体环境下实施交通 投资

- 寻找有效融资机制以促使公 私合作:政府和土地开发商 一起合作
- 对社会,经济和环境可持续性的需求—为了当前和将来居民以及社区其他成员而设计

Objectives

- Use land use planning, zoning, and building permit processes to produce a healthy development pattern supported by , and supportive of, transit
- Design communities that are sustainable socially, economically, and environmentally

目标

- 利用土地使用规划、小 区规划和详细规划形成 一个健康的发展模式, 其由公共交通系统支 持,也同时支持交通系统。
- 设计社会、经济和环境上可持续发展的社区

Goals for Sustainable Urban/ Metropolitan Development

- Attractive, high quality, comfortable, safe
- Green: uses environmentally friendly materials, technologies, operating systems; protects habitat, agriculture, other open space
- Multi-use: convenient mix of housing, jobs, services, shops, indoor and outdoor recreation
- Good options for different incomes, ages, preferences

可持续城市/大都市发 展目标

- 有吸引力、高质量、舒适而 又安全
- 绿色: 环境友好材料,技术和操作系统;保护动物栖息地、农业和其他开放空间
- 混合开发: 住房、就业、服务、购物、室内室外娱乐设施的舒适组合
- 满足不同收入、年龄、爱好者的选择

Best Practices: Sustainable Cities Require Integrated Planning

Coordinate Transportation & Land Use Planning

- Match densities to modal capacities
- Mix uses to provide nearby, convenient access to goods and services - accessible on foot, bike
- Plan for multiple modes
- Plan for multiple market segments
 different age groups, income groups, household sizes; different tastes
- Insist on good urban design to create an attractive, lively walking environments (critical to transit, biking as well as walking itself)

最佳实例:可持续的城市要求整体性规划

• 协调交通和土地使用规划

- 密度通交通容量相适应
- 混合使用,以提供方便的购物和服务途径—步行和骑自行车皆可到达
- 多交通模式规划
- 市场细分规划——针对不同年 龄层、收入层、家庭人口和品 味
- 坚持最好的城市设计,以创建 一个有吸引力,有活力的步行 环境(对公交系统,自行车路 线和步行本身都极为关键)

Sustainable, Integrated Planning Cont.

- Go "green": use green
 materials, processes, and plans
 protect nature, conserve natural
 resources, assure access to
 open space and outdoor
 recreation benefits are
 economic, social/cultural,
 environmental, health
- Developer requirements:
 developers provide sidewalks,
 street trees/landscaping, bike
 parking, car parking, transit
 shelters, direct access to transit
 stations, deep discount transit
 passes for residents, employees
 in building

可持续整体性规划内容

- 走"绿色"路线: 使用绿色环保材料、进程和规划,保护自然资源,确保使用绿地和室外娱乐景点的效益是经济的,社会/文化的,环境的和健康的
- 开发商应遵守:

开发商提供人行道、街道树木/景致、自行车停放地、停车场、交通系统中的车站和到达交通车站的直接路径;给居民和此建筑内员工发放交通打折卡

Best Practices: Land Development

- Transit-oriented development: for infill, for reuse/redevelopment, and for new growth areas
- Mixed uses designed to create & maintain convenient options for living, working, shopping, leisure activities
- Design that is pedestrian and transit friendly
- Multi-modal access plans TOD absolutely MUST have good pedestrian and bike access, feeder services, managed auto traffic as part of land development plan

最佳实践:土地开发

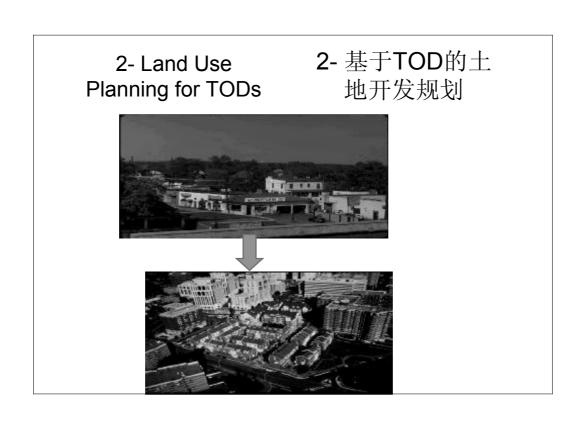
- 公交导向发展: 为了加密、重复使用/再发展和新发展地区
- **混合开发:** 以创建和维护 方便的居住、工作、购 物、休闲活动的环境
- 设计: 方便步行和交通
- 多交通模式通达性规划 作为土地规划的一部分, TOD必须有好的行人和 自行车准入通道、支线服 务和机动车辆交通管理

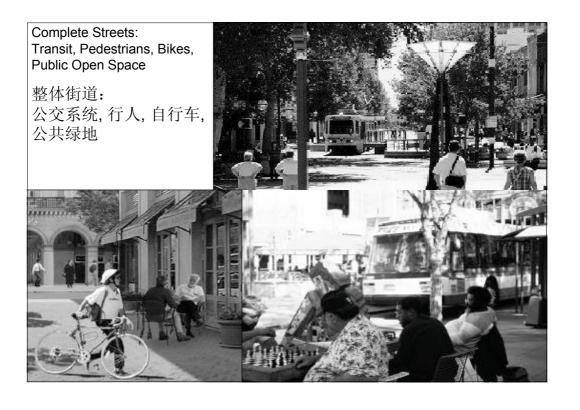
Sustainable Urban Design Strategies

- Complementary Transit, Pedestrian and Bicycle Planning –design street systems for multi-modal transport
- Transit Oriented
 Development putting
 complete streets together
 with sustainable urban
 development
- Sustainable Corridors and Regions - putting TODs together into an urban development strategy that works for everyone

可持续城市设计策略

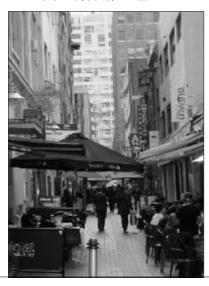
- 辅助交通系统、行人和自行 车规划——为多模式交通而 设计街道体系
- 公交导向发展——整体街道和可持续城市发展相结合
- 可持续发展街道和地区—— 将 TOD 与城市发展策略相 结合





A variety of streets – for transit, mixed traffic, pedestrians (Stockholm, Delft, San Francisco)

不同种类街道—— 针对公交系统、混合车流和行人(斯德哥 尔摩、代尔夫特、旧金山)







Good pedestrian access is key to urban sustainability – in all types of neighborhoods



Pedestrian amenities in Emeryville, CA redevelopment area and Berkeley, CA (low-moderate income neighborhood) along Rapid Bus line

好的行人通达性是城市可持续 发展的关键—包括所有类型居 民区



加里福尼亚二次开发区Emeryville 和加里福尼亚伯克利 (低中收入居民 区)中沿快速公交线路的步行设施

Policies to Support TOD Development

- Policies that encourage development on surface parking lots or skipped over land
- Station siting criteria that favor dense areas or areas that are planned for high density
- Public investment in TOD areas
- Joint development policies public private partnerships
- Value capture programs to help finance both urban development and transportation elements of TOD
- Demonstration projects

TOD发展的政策支持

- 鼓励地面停车场或立交桥下空间的商业开发
- 在高密度地区或高密度规
- 划区设置车站
- 在TOD地区进行公共投资
- 联合发展政策—公私合作
- 鼓励对采用TOD方式的城市发展和交通设施进行投资
- 示范项目

Land Use Strategies for Implementing TOD

- Develop general and specific plans that support urban development at high enough densities to make transit work successfully
- Require mixed uses (for easy access to goods and services)
- Require pedestrian and transitfriendly design (pay attention to street orientation, setbacks, etc.)
- Require compact growth through urban services boundaries, open space preservation, growth management
- Revitalize, reuse, redevelop, infill existing areas - keep existing communities healthy
- Require good design important for public support as well as for long term wellbeing of town or city

有利于实施**TOD**的土 地使用策略

- 推动高密度城市发展的总体和详细规划,保证公交系统的成功使用
- 要求混合开发(方便的就近购物和服务)
- 要求行人和公交系统友好的设计 (注意街道导向,障碍等等)
- 通过设置城市服务边界、开放空间保护和发展模式管理等推动集约化城市发展
- 振兴、重新使用、重新发展、填充现存地区—保持已有社区的健康
- 设计良好——对公众的支持和城 乡长期的发展非常重要

Matching Densities to Transit Service

- Rail leads to high density districts around stations
- BRT, with more stops, leads to linear corridors
- Light rail designs can do either
- · Densities should be high enough to:
 - Assure that the level of transit investment is justified
 - Support an attractive mix of uses and a vibrant community
 - Allow for the inclusion of services for a variety of needs, tastes, income levels

土地使用密度与公交 服务系统相配合

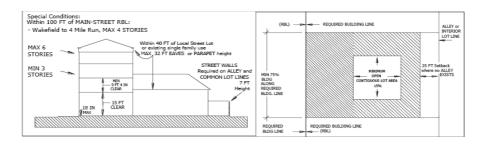
- 地铁系统,可以围绕车站进行高密度开发
- 有更多站点的BRT系统,则可以 进行沿走廊的高密度开发。
- 轻轨设计可以同时考虑上述两种情况
- 公交沿线(站点)应该保证高密度的开发以:
 - 确保公交投资回报
 - 创建有吸引力的,土地混合开发的充满活力的社区
 - 提供针对不同需求、品味、和 收入水平的人群的服务

Form-Based Codes to Guide Development

实例:发展指导准则

Building Envelope Standards

建筑外表标准



12/09/2004

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UC Berkeley Transportation Studio

UC Berkeley Transportation Studio 26

Mix of Land Uses

- Land uses in the TOD should reflect the predominant characteristics of the TOD (CBD, subcenter, residential with services in town center)
- Residents and employees need the things they travel the most for: groceries, produce centers, other food shops; cafes, laundromat, drycleaners; restaurants, bars; pharmacy, medical offices; banks; hardware store; clothing shops, shoe stores; public services such as schools, post offices, libraries, clinics may also be included
- Workplaces, employees need food many of the above plus office supply stores, etc.
- => the objective is to make it easy to meet most regular needs by traveling on foot, with transit for traveling between TODs

土地混合利用

- TOD的土地使用应该反映TOD的 主要特性 (CBD、副中心、居住 地配有城乡中心的服务)
- 居民和附近员工通常的去处:杂 居民和附近员工通常的去处:杂 货店、则引店、洗衣店、干洗构店、 餐厅、酒吧、药店、医疗机构店 餐厅、五金商店、服装店、邮局、 银行、五金商店,即学校、邮局、 到书馆、诊所等
- 除了工作间,员工还需要多种食物以及办公用品商店等等
- => 目标是保证步行的通畅性,来满足最常规的需求,并配以不同开发区域之间的公交系统

Community Oriented Ground Floor Land Uses Near Transit Lines

社区主导的底层土地 开发—靠近车站





Both Transit Services and Land Uses Can Reflect Population Characteristics

- Needs may vary with age, employment status, employment type / occupation, auto ownership
- Example
- carless populations will need more transit service, 24 hr service or other options if late night need arise
- Elderly and people with disabilities may need more attention given to sidewalk quality, aids to walking such as countdown signals; medical services, etc. also

公交服务和土地使用都需要 依据人口特点来安排

- 需求因年龄、就业阶层、就业类别/职业、自主经营不同而不同
- 例如
- 不开车的人将需要更多的公 交系统服务、**24**小时服务 或其他夜班车
- 人行道,步行辅助设施,如 倒计时信号,医药服务等等 还应更多的考虑到老人和残 疾人

Differentiate CBD and Employment Center TODs from Residential TODs

- Uses that draw customers from all over the region are best placed in TODs with the most transit service, typically CBD or other major centers
- E.g. Stores selling sports equipment, or flags, or specialty goods
- Predominantly residential TODs need mostly local-serving retail – scale of building and frequency of demand mean every neighborhood can support these uses

将中央商务区和以工作中 心的TOD与住宅区TOD区 分开

- 通过以上方法来将整个TOD区的顾客有效分配至各个公交服务系统、中央商务区和其他一些主要的中心区。
- 例如:体育用品店,旗舰店和其他特许商品经营店。
- 以住宅为主的TOD 应当能够提供区域化零售服务,其服务应根据建筑群的规模和居住人群的购买频率,建立能满足临近购物需求的体系。

...but many uses can fit into a TOD with good management

- Mega-supermarkets can work if parking is managed carefully and entries are pedestrian friendly –or if deliveries are offered
- Furniture and appliance showrooms can fit in if deliveries are made from offsite warehouses rather than onsite storage or take-away
- Car parking and even gas stations can fit in with good design
- The main thing to avoid: big blank walls, big parking lots, blocks that are too long, excessive traffic generation, too many driveways – all things that make walking unpleasant, uncomfortable, or unsafe

...但是通过良好的管理,许 多服务都可以在TOD内部 应用。

- 可以对停车场进行有效的管理并疏导入口使其便于步行,或者提供外送服务,那么超级市场的经营将会很顺畅
- 如果对家具和其他家庭用具能够在 外存仓库进行运送货物服务而非就 地存货或取货,那么家具或家庭用 具在商店可以进行更好的陈列展 示。
- 通过合理的设计,也可以配备停车 场甚至是加油站。
- 需要避免的事项:大型无窗墙、大型停车场、过长的堵塞、过多的交通流量、过多的车道--总之就是使一切感觉不愉快、不舒服或是不安全的方面。

NOT TOD! Autodependent transit??

While this station in Los Angeles has high rises near it, the elevated Right of Way and park and ride lots are unattractive and repel pedestrians – almost no one walks and those who do, suffer indignities and discomfort

位于洛杉矶的车站--附近有高架桥,高架对行人造成很大的感官压迫,基本没有人会步行到车站。因为行人在此会遭遇很大的尴尬和不便。

非TOD! 以汽车为中心的运输方式??



Not convenient – offices only

This development clusters a number of high rise office buildings around a suburban rail station. There is a bus bus connection, and wide sidewalks, but the street level is bleak with no pedestrian oriented uses. This development approach fails to fully take advantage of location and synergy, and misses out on place making.

该区域聚集了一批环绕在郊区 地铁站附近的高层办公楼。有 公车、公车转乘站和宽广的人 行道,但是路面很突兀,没有 良好的步行环境。该开发方案 没有能充分利用场所及其协同 作用,同时也没有对空间进行 很好的按排。

不便利—只有办公区



Good TOD Ideas

好的TOD建议



High Density around Transit: Curitiba (BRT), San Francisco (multi-modal). Washington suburbs (Metro) 围绕公交系统的高密度开发: 旧金山(多模式) **Curitiba**(BRT) 和华盛顿郊区(地铁)

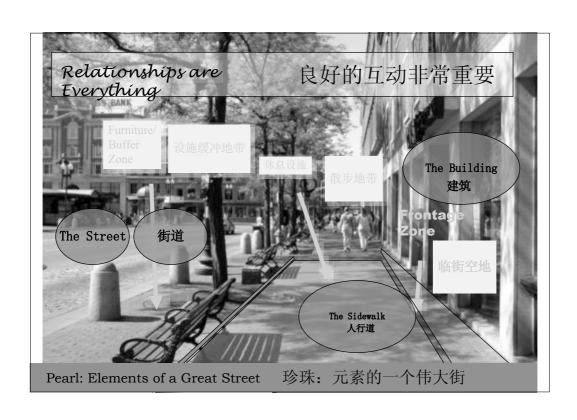


Sustainable Urban Design Strategies

- Complementary Transit, Pedestrian and Bicycle Planning –design street systems for multi-modal transport
- Transit Oriented
 Development putting
 complete streets together with
 sustainable urban
 development
- Sustainable Corridors and Regions - putting TODs together into an urban development strategy that works for everyone

可持续城市设计策略

- 互补的公交,步行,和自行 车系统--多模式的交通系统 应包括为行人和自行车设计 的街道系统。
- 公交导向发展--根据城市的可持续性发展对全部城市街道进行统筹策划。
- **可持续街道和区域**—将 TOD与城市开发策略相结 合。





Pedestrian improvement plans can also include plans for trees and other plantings, plazas and small parks. Landscape treatments can help provide "gateways" and also can be used to assist finding the way (San Francisco)

行人改善规划还包括树和其 他植物、广场和小公园的改 善规划。风景治理也有利于 提供"入口",也可以用于协 助找路。(旧金山))



Barriers to Good Pedestrian Design

Traffic issues:

- Traffic speeds that are too high
- Streets that are too wide
- Signals timed for too fast walking
- Parking that blocks pedestrian access or visibility
- Inadequate enforcement of traffic laws Finance issues:
- Lack of government funding for pedestrian improvements
- No requirements for private sector participation

Land use issues:

- Excessive setbacks
- Parking in front of building
- Poor articulation of sidewalk and building entries
- Vendors blocking passageway

实现良好步行设计 的阻碍

交通因素:

过快的机动车速

过宽的道路

信号灯为步行过路设计的时间过短 阻碍进入步道或步道可见性的停车位 交通法规执行不力

财政因素:

改善步行的规划缺少政府的资金支持 对私人投资建设的排斥

土地适用因素:

过多的障碍

建筑前停车位

人行道和建筑入口并没有实现良好的

连接

小贩阻塞人行道

Addressing Barriers

- Inventories of current conditions to identify deficiencies
- Inventories of best practices guidebooks to good design
- Design guidelines for streets, sidewalks, buildings – new and redesigned
- Pedestrian-friendly traffic signalization and operations
- New technologies for pedestrian safety and convenience
- Parking management regulating where, when, and for how long cars may park
- Parking pricing an element of management, and a source of revenue
- Enforcement of parking laws
- Development exactions and impact fees to pay for improvements

去除障碍

- 清查现有条件以查找不足
- 将现有的好方法编辑成册--指南以 实现良好设计
- 建立街道、人行道、建筑设计规范。
- 行人友好型交通信号与操作
- 新科技的应用以保障行人道安全、 便捷
- 停车管理--对机动车的停车地点、 时间、停留时间进行管理。
- 停车收费--实现管理的一个要素, 财政的一个来源。
- 停车法规的执行
- 收取建设费用和影响费用用于进行改善

Making Development Environmentally Sustainable

- Green technologies: for fuels and vehicles, roads and pavements, transit and traffic operations
- Green technologies for buildings, neighborhoods, districts: water, power, sewer treatment, waste disposal;
- Getting the price right for automobile use and parking

创造环境可持续的发展

- 绿色科技:应用于燃料、机动车、道路、人行道、交通运输、交通操作的绿色科技
- 建设建筑、街道、小区时适 用的绿色技术:该技术广泛 应用于供水、电力、排水设 计、废物处理。
- 向机动车使用和停车收取适 当费用。

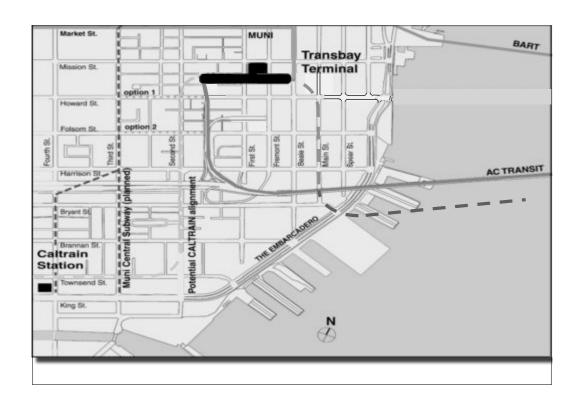


San Francisco Transbay Terminal and Redevelopment Area Proposal

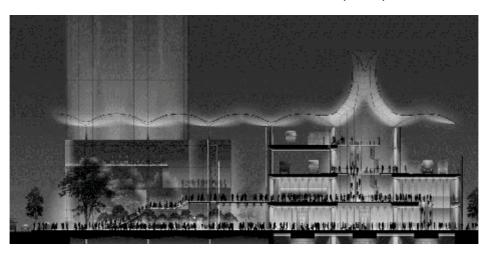
旧金山交通中转枢纽和再 开发地区建议







Conceptual Drawing of Transbay Terminal (Bus/Rail/LRT/BRT -San Francisco) - \$1 B (2001) 交通枢纽概念设计(公共汽车/铁路/轻轨/BRT--旧金山)-\$1B(2001)











Commercial Streets Around Terminal

枢纽附近的商业街道

Economic Value

- Market- rate residential districts that provide high quality public spaces command an average premium of \$20,000/residential unit (1999 \$)
- Higher value holds for market rate units in TOD even when housing in area is designed for a mix of incomes and ages
- Commercial land values 10-20% higher in TOD areas

Source: ULI; CNU

经济价值

- 提供高品质的公共空间的住房: 其市场价值平均增加 20000美元/户。(1999\$)
- 即使该地区是为不同收入阶层 和不同年龄段的人群设计 的,TOD仍可以提供较高的市场 附加值。
- 在TOD区域内土地的商业价值 高10-20%

来源: ULI; CNU

Funding Plan

In Millions – Year of Expenditure \$	
Project Costs	
Capital Costs (including value Engineering)	\$ 2,082
Debt Service	\$ 1,857
Total Costs	\$ 3,940
Project Revenues	
Committed Revenues	
Sales Tax (San Mateo County)	\$ 27
Regional Transportation Improvement Program	\$ 23
Land Sales	\$ 287
Tax Increment	\$ 534
Net Operating Revenues (Including Bridge Tolls)	\$ 140
SFCTA Proposition K (Passed by Voters Nov. 2003)	\$ 295
FTA Section 1601	\$ 9
Regional Discretionary Funds	
Regional Measure 1 (Bridge Tolls)	\$53
AB 1171	\$ 150
Regional Measure 2 Bridge Toll Increase	\$ 150
Revenues Requiring Measures to be Voted	
High Speed Rail Bond	\$ 475
Other Revenues	
Passenger Facility Charge	\$ 873
Leverage Lease Transaction	\$ 50
TIFIA Loan	\$ 689
Other Revenues to be Determined	\$ 182
Total Dayanyas	\$3,040

资金规划

年度开支百万(美元):	
项目成本:	
投资费用(包括价值工程):	\$ 2,082.9
偿债额:	\$ 1,857.2
总花费:	\$ 3,940.1
项目收益:	
承诺收益:	
营业税(SanMateo郡):	\$ 27.0
地方交通改善规划:	\$ 23.0
土地收益:	\$ 287.9
税增加额:	\$ 534.2
净营业税(包括过桥费):	\$ 140.2
SFCTA的K提议(2003十一月投票通过):	\$ 295.0
FTA部分1601:	\$ 9.4
地方自主资金	
地方收费1(过桥费):	\$53.0
AB 1171	\$ 150.0
地方收费 2 过桥费增加额:	\$ 150.0
需表决的收费项目的收益:	
高速铁路债券:	\$ 475.0
其他收入:	
旅客设施收费:	\$ 873.0
杠杆租赁事项:	\$ 50.2
TIFIA贷款:	\$ 689.7
其他待定收入:	\$ 182.5
总收入:	\$3,940.1