



Department of Architectural Engineering and Urban Planning

ENPL333 – Principles of Spatial Planning 1

Lecture 6: Zoning

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What is zoning?

What is zoning?

Zoning is a tool to **control the use of private land**.

Traditional zoning dates back to the **early twentieth century**.

Traditional zoning is most widely adopted from **Euclidean zoning** - named after the U.S. supreme court case that upheld it – focuses on the **type and intensity of land uses** and separates incompatible uses.

A Euclidean zoning ordinance has two parts:

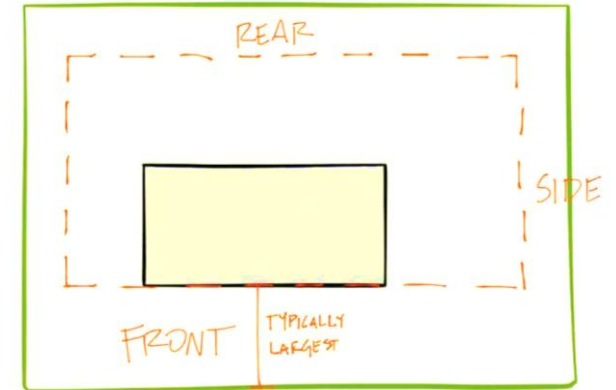
- A text that outlines the types of zones (land uses and their specifications)
- A map that shows the location of the various types of zones (districts).

Euclidean zoning **governs each parcel** in a district.

What is zoning?

➤ Each zoning designation has a **set of attributes** including:

- Land use
- Lot size
- Setbacks
- Building coverage
- Building size (floor area ratio FAR)
- Building height
- *Density*
- Parking
- Landscape

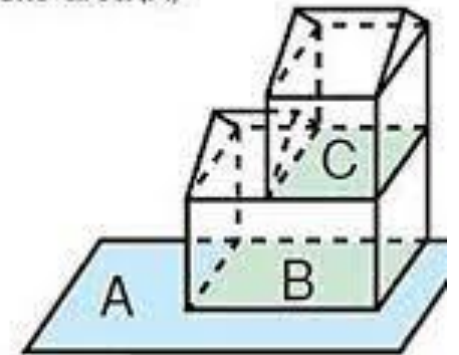


Floor-Area Ratio (FAR)

$$\text{FAR}(\%) = \frac{\text{total floor area (B+C)}}{\text{site area (A)}} \times 100$$

Building Coverage Ratio (BCR)

$$\text{BCR}(\%) = \frac{\text{building area (B)}}{\text{site area (A)}} \times 100$$



What is zoning?

- These set of **attributes creates an envelop for each lot/parcel** in which development can take place.

For example, in a **low-density residential** zone, the ordinance would specify the **use** (e.g. single-family unit), **setback** dimensions (a house has to be a certain number of meters from the street and from the neighbours), the floor area ratio (a calculation of the amount of allowable construction in relation to the lot size). It also outlines the amount of required **parking**.

- All these attributes can be adjusted to meet planning goals.

For example, if a municipality wishes to **encourage concentrated development** in this area, all it would have to do is ***increase the number of allowable units, reduce the setbacks, and increase the FAR.***

Regulating Land Use

Regulating land use

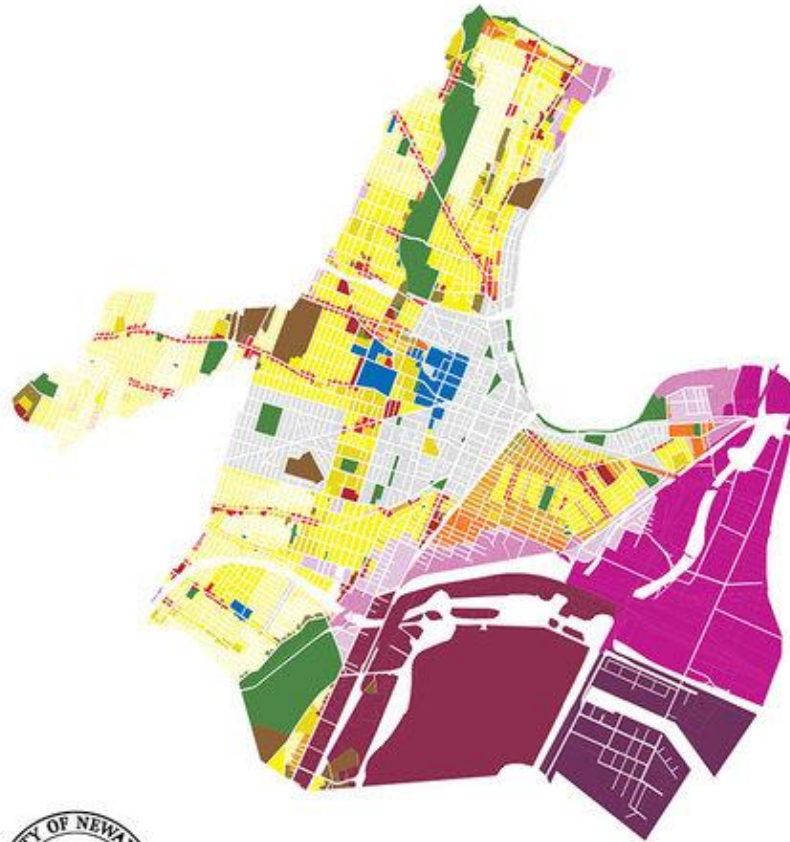
Zoning regulations **typically define districts by uses.**

The **basic use categories** in most communities are:

- Agricultural
- Residential
- Commercial (or business)
- Industrial (or manufacturing)

Regulating land use – example of zoning, map no.1

Newark Zoning & Land Use Regulations



NPO
NEWARK PLANNING OFFICE

November 2014

Introduction to Zones

On the preceding Newark Zoning Maps, every area of the city appears as a color that corresponds to one of the zones below. This introduction to the zones

provides a general overview of what land uses are permitted and prohibited in each zone, the rules for design, and maps of where within Newark the zone appears.

Residential
1 Family
R-1



Residential
1-2 Family
R-2



Residential
1-3 Family & Town House
R-3



Residential
Low-Rise Multifamily
R-4



Residential
Mid-Rise Multifamily
R-5



Residential
High-Rise Multifamily
R-6



Neighborhood Commercial
C-1



Community Commercial
C-2



Regional Commercial
C-3



Light Industrial
I-1



Medium Industrial
I-2



Heavy Industrial
I-3



Mixed Use 1
Residential & Commercial
MX-1



Mixed-Use 2
Residential, Commercial, Industrial
MX-2



Port
PORT



Airport & Airport Surround
EWR & EWR-S



Redevelopment Zone/Special District
RDV/SD

Regulating Intensity

Regulating intensity

➤ There are four basic measures of intensity in zoning:

1. Residential intensity measured in **dwelling units per acre**
2. **Minimum** lot sizes
3. Commercial and industrial intensity measured in floor area ratio (**FAR**), which is the maximum number allowed for the ratio of the floor area of the proposed building to the land area of the lot on which it will be built (thus, an FAR of 2 would allow a building with twice the floor area of the lot)
4. **Indirect intensity** regulation through **maximum height restrictions** (if a building can be only two stories high, that imposes a significant limit on the total intensity of use at that location).

Regulating intensity

- **Intensity varies by zoning district.**
- **Intensity of use and unit type distinguish one residential district from another.** Thus, a community may have three single-family residential districts, allowing development on **1-acre**, half-acre, and quarter-acre lots, respectively, and three multifamily districts, allowing eight **dwelling units per acre**, twelve dwelling units per acre, and sixteen dwelling units per acre.

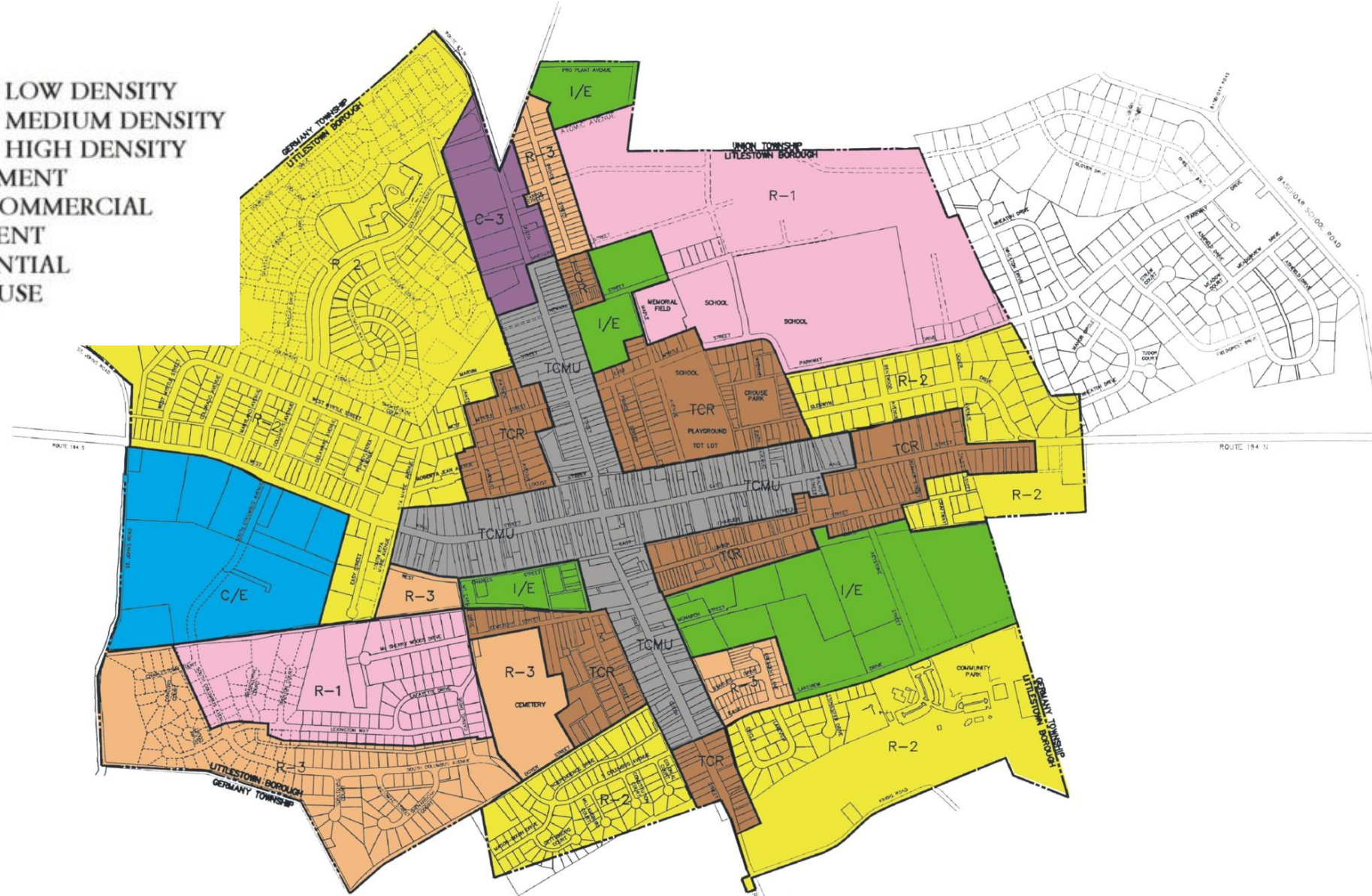
Zoning Districts, Fargo, North Dakota

District Label	Description
AG	Agricultural district
SR-1	Single-family, 16,000 square foot minimum lot
SR-2	Single-family, 8,000 square foot minimum lot
SR-3	Single-family + duplex, 5,000 square foot minimum lot
SR-4	Single-family + duplex, 3,600 square foot minimum lot
MR-1	Multidwelling district
MR-2	Multidwelling district
MR-3	Multidwelling district
MHP	Mobile home park district
NO	Neighborhood office district
NC	Neighborhood commercial district
GO	General office district
LC	Limited commercial district
DMU	Downtown mixed-use district
GC	General commercial district
LI	Limited industrial district
GI	General industrial district

Regulating intensity

- R-1
- R-2
- R-3
- C/E
- C-3
- I/E
- TCR
- TCMU

RESIDENTIAL DISTRICT LOW DENSITY
RESIDENTIAL DISTRICT MEDIUM DENSITY
RESIDENTIAL DISTRICT HIGH DENSITY
COMMERCIAL/EMPLOYMENT
HIGHWAY ORIENTED COMMERCIAL
INDUSTRIAL EMPLOYMENT
TOWN CENTER RESIDENTIAL
TOWN CENTER MIXED USE



Local Zoning Examples

نظام الابنية والتنظيم للهيئات المحلية رقم (5) لعام 2011

التصنيف : سكن ب

ارتفاع البناء : 18 متر

عدد الطوابق : 5 طابق

النسبة المئوية : 42 %

النسبة الطابقية : 210 %

ارتداد امامي : 5 متر

ارتداد خلفي : 4 متر

ارتداد جانبي : 3

الحد الادنى لمساحة قطعة الأرض: 750 متر مربع



سكن	سكن
استعمال:	سكن
ارتداد الأمسي:	م5
ارتداد الظلي:	م5

مباني عامة مرتفعة

تتألف من مشروع تعليمي خاص

[illegible]

90 % الحد الأعلى للنسبة الطاقية:

معيار من تحدية بالحكام خاصة

- 216 -

1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 2679, 26

عدد الطوابق طابقين وتسوية وطابق سطح

مردودہ امری:

2- مدني: الشقاق (ب): أربعة مائة ألف و مائة (13) من يابياً فوق

1- مجمع النادي الدبلوماسي والرياضي والعيادة وروضة الاطفال على القسيمة رقم (125)

STUDENTO LUB

Non-traditional Zoning Approaches

Non-traditional zoning approaches

➤ Over time, city planners have created *new forms of zoning*:

- Performance zoning
- Incentive zoning
- Inclusionary zoning

Performance Zoning

Performance zoning

- Performance zoning was invented in the 1970s.
- This type of zoning ordinance has **fewer specific restrictions** on land use **but requires development to meet a flexible set of general standards**. For example, a performance zoning ordinance may simply require buildings in a commercial area to be no larger than a certain number of square meter in size but have few other restrictions as long as general standards are met.
- Performance zoning organizes land uses according to their ability **to meet clearly stated community goals**.
- Since its invention, many cities have **adopted performance zoning**, often **overlaying its provisions on pre-existing Euclidean codes**.
- Performance Zoning for residential development has the **primary objective of protecting natural resources** (e.g. wildlife habitat, ground/surface waters, forest blocks, etc.), followed by providing flexibility in design.

Performance zoning

Three primary performance criteria are:

- Minimum open space
- Maximum density
- Maximum impervious surface

Performance zoning

- A **special type** of performance zoning is the **Planned Unit Development (PUD)/ clustered zoning**.
- This designation allows for the arrangement of a **large, multi-acre site to meet standards as a whole** even though individual lots may not be in compliance. A PUD provision might call for 30 percent open space but allow it to be met in a park, thus permitting clustered housing within the site.

Incentive Zoning

Incentive zoning

- Some cities have used incentive to achieve planning goals
- **Incentive zoning** offers developers **bonuses such as additional allowed square meters in exchange** for the provision of a **given feature**.
- **Transit stations, public gardens** are typical **features** that a city might acquire through **incentive zoning**.

For example, a developer willing to set aside an area for open space conservation may be allowed to develop **a taller building**, which not only would be more profitable for the developer but also would **create more open space for the community**.

- The **results** of such zoning have **varying qualities!** *Need for impact assessment!*

Inclusionary Zoning

Inclusionary zoning

- This type of zoning is **similar to incentive zoning** but provides for a greater level of development when a proposal includes elements beneficial to the community, such as **low-income housing** - (incentive zoning for **social goals**).
- For example, some cities and towns have zoning ordinances that allow for developers to **increase the overall amount of housing development** on a piece of land if the development includes **affordable housing for low-income residents**, an additional housing unit for every unit that is set aside for affordable housing.