

Extending real estate supply, increasing housing affordability by price reduction - a study of land use regulations intervention in TOD Zones in National Capital Region, India

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This paper is about TOD corridors in the National Capital region of Delhi, India and measures effects of change in land use regulations. TODs are characterized as pedestrian-friendly dense property developments, which are organized within a half-mile of quality public transportation nodes or stations. Being close to transit, TODs provide greater access to jobs, housing and several recreational land uses to all including opportunity for people of all ages and incomes (Calthorpe 2001; Cervero and Dai 2013; Kamruzzaman et al. 2014; Reconnecting America 2015). TOD often also means developing new housing mixed-income housing near rail stations (Chatman 2013), developing other desirable uses such as hotel, retail or commercial offices as mixed type developments (Lund 2006; Urban Land Institute) promoting walkability and healthy urban environment. TOD although gaining popularity, is still relatively a new concept in the developing world, and has only received a limited attention from the land use and planning scholars.

This paper is about six Transit Oriented Development (TOD) corridors in the National Capital Region of south western Delhi, India. The focus of the paper is to measure the effects of changes on the localized real estate market — on demand and supply of developable properties — with modification in land use regulations along the TOD corridors. The Town and Country Planning department introduced the TOD policy

in Delhi. This policy proposed increase in the density along the mass rapid transit system (MRTS) corridors with a higher FAR of 3.00 from the current FAR of 1.75 along the six TOD corridors (BOV 2015). This modification is expected to have a significant impact on the supply of new property, and thus on the housing price. This TOD policy has a zone of influence of about 53 linear Kms. covering an area of approximately 13,100 acres. Approximately **955 acres** of land within the 500 m wide TOD zone on both side of the MRT corridor. It has been hypothesized that the landowners in the corridor and real estate development market will respond to the policy change (International Transport Forum 2013; Bartholomew 2011; Bertaud, 2010; CTOD 2008). Five land development scenarios were developed based on the land's ability to adapt to the change of land use regulation and supply was estimated. Since policy change occurred more recently, while the SW-NCR region is experiencing major development, a lot of land is already developed.

This paper first covers a review of TOD worldwide and then capture the effect of land use regulatory changes on the new real estate supply, housing price, and housing affordability using the NCR case of TOD zone. This paper, using the case of new land use regulations for the TOD corridors in Gurgaon -- the fastest growing city in the south west of National Capital region of Delhi, India -- this paper, measures effect of changed in land use Regulations from FAR of 1.75 to 3.0 (BOV 2015) on Real Estate Supply, Housing Price and Housing Affordability. The paper is a useful contribution to the literature on land use regulations within the context of TOD especially in developing world context and highlights the effect that land use regulations have on property markets.

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