RAPPORT

LA CAPTATION DE LA PLUS-VALUE FONCIÈRE COMME SOURCE DE FINANCEMENT DU TRANSPORT COLLECTIF POUR LE GRAND MONTRÉAL

OCTOBRE 2014

BANQUE NATIONALE

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LA CAPTATION DE LA PLUS-VALUE FONCIÈRE COMME MOYEN DE FINANCEMENT DU TRANSPORT COLLECTIF POUR LE GRAND MONTRÉAL

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DOCUMENT DE DISCUSSION SUR LA CAPTATION DE LA PLUS-VALUE FONCIÈRE

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Document préparé par:

George Hazel Consultancy

George Hazel Consultancy Ltd
3 Hill Street
Édimbourg
EH2 3JP

E-Rail

Edinburgh-Rail Ltd
17 Rutland Street
Édimbourg
EH1 2AE

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La Banque Nationale du Canada est heureuse de s'associer au Dr George Hazel, expert reconnu internationalement dans le domaine du transport collectif, et son équipe d'experts pour rendre public ce rapport sur la captation de la plus-value foncière dans la grande région de Montréal.

Soucieuse d'apporter des solutions au défi des finances publiques du Québec tout en contribuant à l'essor économique de la grande région de Montréal, la Banque Nationale du Canada a pris l'initiative de mandater le Dr George Hazel et son équipe pour analyser une nouvelle source de financement pour le transport collectif, soit la captation de la plus-value foncière.

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La renaissance du transport collectif

Nos équipes ont rencontré les responsables de plusieurs grands projets de transport collectif tant en Asie, en Europe qu'en Amérique du Nord et ont pu constater la renaissance du transport collectif à l'échelle mondiale et son impact structurant sur les grandes métropoles :

En Asie

- Hong Kong : Déjà reconnu comme la référence mondiale pour son réseau de transport collectif, non seulement comme le plus efficace au monde mais aussi comme le seul à s'auto-financer, le réseau du MTR de Hong Kong continue à investir de façon importante dans son expansion pour le relier à celui des trains à grande vitesse de Chine.
- Chine : Considéré par les experts de la Banque Mondiale comme le plus important projet de développement ferroviaire du siècle, le projet des autorités chinoises consiste en la construction du plus important réseau de trains à grande vitesse au monde avec 16 000 km de lignes électrifiées reliant les principales villes du pays.

En Europe

- Londres : Construction de Crossrail, le plus important projet de construction en Europe au coût de 14.8 milliards £, constitué d'une ligne de métro est-ouest de 100 km et 40 stations.

  Crossrail augmentera la capacité du transport collectif à Londres de 10 %, représentant la plus importante augmentation de capacité depuis la 2e Guerre mondiale, et réduira de façon importante le trajet de Heathrow au centre financier de Londres de 55 à 32 minutes.

En Amérique du Nord

- New York : Extension de la ligne de métro 7 pour plus de 2 milliards de dollars US, qui permettra de relier le centre de congrès Javits et l'ouest de Manhattan au réseau de transport collectif, ainsi que la réalisation du projet de Hudson Yards.

  Ce projet de 17 millions de pieds carrés est non seulement le plus important projet de développement immobilier à New York depuis le Rockefeller Center, mais aussi le plus important projet immobilier aux États-Unis.
- Toronto : Projet de desserte ferroviaire de l'aéroport Pearson de Toronto dès 2015, le projet Union Pearson Express, à partir de la station Union du centre-ville avec un trajet de 25 minutes et un départ aux 15 minutes.

  Ce projet s'inscrit dans le plan de développement du transport collectif dans la région de Toronto et d'Hamilton, The Big Move, un projet de plus de 40 milliards de dollars qui a pour objectif de tripler le kilométrage du réseau de transport collectif d'ici 25 ans. Il s'inscrit aussi dans le projet de rénovation de plus de 600 millions $ de la station Union, la plus achalandée au Canada avec 240 000 passagers par jour.
- Ottawa : Ligne de la Confédération, un système léger sur rail (SLR) de 2,1 milliards de dollars permettant de désengorger le centre-ville d'Ottawa de centaines d'autobus.

  D'une longueur de 12,5 km incluant une portion souterraine de 2,5 km, ce projet est le plus important projet d'infrastructure de transport à Ottawa depuis la construction du canal Rideau. La Ville d'Ottawa a créé un partenariat public-privé qui comprend des engagements financiers des gouvernements provincial et fédéral ainsi qu'une équipe du secteur privé.

Afin d'assurer sa croissance à long terme et maintenir son leadership créatif à travers le monde, la grande région de Montréal doit miser sur des infrastructures de transport collectif modernes dans le respect des contraintes budgétaires et financières que nous connaissons tous.

En effet, le gouvernement du Québec est engagé sur la voie de l'assainissement des finances publiques et il est impératif d'envisager d'autres avenues éprouvées afin de contribuer à l'atteinte de cet objectif.

Face à cette concurrence internationale, la grande région de Montréal ne peut se permettre de prendre du retard et doit regagner le peloton de tête qu'elle a déjà occupé dans le secteur des infrastructures de transport collectif.

Par ailleurs, rien n'illustre mieux l'importance stratégique des infrastructures de transport collectif que le projet de SLR sur le nouveau pont qui remplacera le pont Champlain ainsi que la desserte de l'aéroport international Montréal-Trudeau et de l'Ouest de l'île.

Ces deux projets sont à l'étude depuis des années, et leur réalisation à l'horizon 2018, lorsque le nouveau pont Champlain sera réalisé, devrait permettre d'éviter un étranglement de Montréal et de ses voies de transport lors de la réfection tant attendue de l'échangeur Turcot.

L'utilisation de la captation de la plus-value foncière comme source de financement du transport collectif dans la grande région de Montréal permettrait la contribution du secteur privé au coût de construction des nouvelles infrastructures de transport collectif. Selon nos estimations préliminaires, une contribution substantielle du secteur privé, soit jusqu'à 35 % du coût de ces infrastructures, serait envisageable pour ces deux grands projets.

Elle permettrait également le devancement du calendrier de réalisation de ces grands projets, afin qu'ils soient complétés pour 2018, à l'achèvement du nouveau pont.

La grande région de Montréal dispose de plusieurs atouts pour développer en son sol cette nouvelle source de financement du transport collectif :

- Forte concentration de population sur le trajet de ces deux projets : avec une population de 3,8 millions d'habitants, soit 49 % de la population du Québec, la grande région de Montréal affiche un achalandage record de plus de 516 millions de passagers annuellement sur son réseau de transport collectif.
- Présence d'importants investisseurs institutionnels à long terme dans le secteur immobilier.
- Solide achalandage pour le transport collectif, tel qu'illustré par le succès de la navette 747 de la STM pour l'aéroport Montréal-Trudeau et les 50 000 déplacements par jour en transport sur le pont Champlain, le plus achalandé au Canada.
- Qualité de gestion de la STM, première société de transport collectif au Québec avec des revenus de plus de 1,3 milliards de dollars et une qualité de gestion financière et opérationnelle reconnue par les organismes internationaux indépendants comme le GFOA (Government Finance Officers Association), l'APTA (American Public Transportation Association) et les agences de crédit internationales telles que Moody's (cote Aa2).
- Présence sur son territoire de leaders mondiaux dans le domaine du transport ferroviaire tel Bombardier Transport et de l'électrification des transports tel Hydro-Québec.

Les recommandations des experts mandatés devraient nous convaincre de l'importance d'utiliser cette nouvelle source de financement pour devancer la réalisation des grands projets de transport collectif essentiels au développement du Québec.

Vincent Joli-Coeur
Vice-président du conseil, Marchés financiers
Banque Nationale du Canada

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Résumé

Le présent document examine l'intérêt des méthodes de captation de la plus-value foncière (CPVF) pour Montréal et le Grand Montréal. Il s'intéresse à la mise en œuvre des méthodes de CPVF au voisinage des stations dans le monde. Tout indique que l'amélioration de la mobilité découlant de la création de nouveaux services de transport fait augmenter la valeur foncière et la valeur du développement. Cela est admis d'emblée par l'industrie immobilière. Aussi apparaît-il juste qu'une partie de la richesse créée par le nouveau service de transport serve à financer l'installation de l'infrastructure de transport collectif. Il s'agit donc de trouver des méthodes de CPVF qui répondent aux besoins à la fois du secteur public et du secteur privé ainsi que des projets et des lieux permettant d'appliquer ces méthodes avec succès. Le présent document explique comment cela peut être accompli.

Montréal doit impérativement se doter d'un réseau de transport collectif de premier ordre si elle veut conserver son caractère de ville internationale. Un tel réseau assure non seulement la compétitivité économique d'une ville, mais contribue également à créer un cadre de vie agréable et durable. Il contribue également à réduire les atteintes à l'environnement en favorisant le recours au transport collectif et à la bicyclette ainsi que la marche, ce qui libère de la capacité sur le réseau routier au profit des usagers qui n'ont d'autre choix que d'emprunter ce réseau. Les méthodes de CPVF sont une source de financement et de viabilité financière qui peut contribuer de façon importante à l'amélioration des infrastructures de transport.

Le présent document décrit diverses méthodes de CPVF, certaines basées sur le développement immobilier, d'autres fondées sur la fiscalité, et donne des exemples de mise en œuvre de ces méthodes en différents endroits dans le monde. Il explique également que la CPVF est un moyen auquel le Grand Montréal pourrait fort utilement recourir en vue de se doter d'un réseau de transport collectif de premier plan, de nature à préserver sa compétitivité sur le plan international ainsi que sa qualité de vie.

Si Montréal doit utiliser des méthodes de CPVF, certaines mesures essentielles devront être mises en œuvre :

- Convenir d'objectifs avec les principaux intervenants
- Comprendre la valeur et la capter pour tous les partenaires
- Élaborer des modèles de gouvernance et des modèles d'affaires
- Protéger les fonds captés pour le projet de transport
- Protéger l'indépendance de la planification
- Protéger la confidentialité
- Sélectionner des projets-pilotes prêts à être mis en œuvre

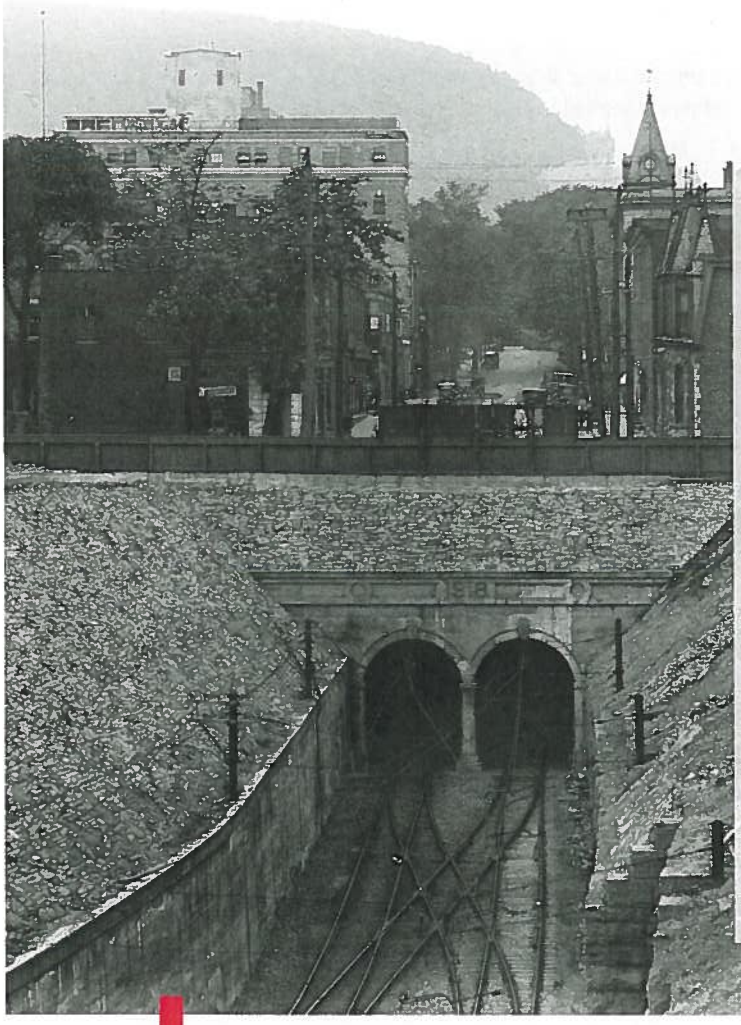
De plus, un certain nombre de défis devront être relevés :

- Acceptation du principe de CPVF et de ses avantages
- Volonté de changer et d'agir
- Collaboration entre les intervenants des secteurs public et privé
- Modification possible de la politique et de la stratégie
- Modification possible du cadre juridique
- Modification possible des méthodes d'évaluation

Enfin, ce document énumère certaines des prochaines étapes à envisager dans l'éventualité où l'on déciderait de mettre en œuvre les méthodes de CPVF à Montréal et de s'assurer les contributions financières nécessaires à la réalisation des projets de transports.

Introduction

Le présent document est une introduction au concept de la captation de la plus-value foncière (CPVF). Il explique en quoi consiste la CPVF et en quoi elle peut contribuer au financement des services publics. Il s'intéresse plus particulièrement à la hausse de la valeur foncière et de la valeur du développement au voisinage des stations, de même qu'à la façon de capter cette augmentation de valeur à des fins de financement du transport collectif et de création d'une ville qui soit compétitive et qui offre un cadre de vie sain, de nature à assurer une qualité de vie remarquable à ses habitants, à ses entreprises et aux visiteurs.



Tunnel du CNR sous le mont Royal, Montréal, QC, 1918 (réf. 3).

Qu'est-ce que la CPVF ?

La captation de la plus-value foncière (CPVF) consiste à capter l'augmentation de la valeur des terrains et des immeubles écoulant de l'amélioration de l'accès à un moyen de transport. Un meilleur accès a une valeur qui se traduit par une hausse de la valeur des terrains et des immeubles, tout comme d'avoir une propriété aux abords d'un plan d'eau. Le présent document de discussion porte sur la plus-value créée aux abords des stations.

La CPVF n'est pas chose nouvelle

Le concept de CPVF n'est pas nouveau. Le Canada a même été un pionnier en ce qui a trait à la CPVF comme moyen de financer la construction d'infrastructures ferroviaires. La construction du Chemin de fer Canadien Pacifique (CFCP) a été partiellement financée par l'octroi de droits de construction aux promoteurs de ce chemin sur une bande de terrain de 48 milles de largeur en bordure du tracé. C'est le Canadien Pacifique qui a déterminé l'emplacement et la configuration des villes dans le nouveau Canada, et ce, sur la base de la plus-value potentielle à capter aux abords des gares afin de financer partiellement la construction de la voie ferrée transcontinentale (réf. 1).

À l'échelon local, au début du XXe siècle, concurremment avec l'élaboration du coûteux projet de construction d'un tunnel sous le mont Royal, la Canadian Northern Railway (CNR) avait prévu de développer la zone à faible valeur foncière située au nord du mont Royal dans l'idée d'en financer la réalisation en vendant des terrains à usage résidentiel. Une fois le tunnel complété et Ville de Mont-Royal reliée au centre-ville, on a assisté à une nette augmentation de la valeur des immeubles. Ville de Mont-Royal est née de cette façon, dans la foulée d'une CPVF destinée à financer la construction d'une liaison ferroviaire (réf. 2).

À Londres, en Angleterre, le réseau de transport souterrain a utilisé la même formule en 1863, c'est-à-dire qu'il a capté la plus-value foncière générée aux abords d'une gare afin de financer le tronçon de ligne suivant. Il est possible aujourd'hui d'utiliser cette formule au profit de la population et des entreprises du Grand Montréal.

La CPVF peut créer de la richesse collective et générer des profits

À Londres, le prolongement de la ligne Jubilee entrée en service en 1979 a entraîné une augmentation de 13 milliards £ de la valeur des terrains et des immeubles au voisinage des 10 stations situées entre Stratford et Waterloo, comparativement à un coût en capital de 3,5 milliards £. Deux rapports étayent ces chiffres. Un rapport réalisé pour le compte de « Transport for London » a évalué à 3 milliards £ environ la hausse de valeur pour deux des stations uniquement (réf. 4). On estime que 10 % environ de cette plus-value, principalement générée par des travaux immobiliers dans Canary Wharf, ont été captés au profit du projet.

Par ailleurs, selon une enquête nationale menée au Royaume-Uni en avril 2012, les immeubles situés dans un rayon de 500 m d'une station de métro ont vu leur valeur augmenter de 9 % de plus que les immeubles semblables situés ailleurs le long d'une même ligne. L'enquête menée en 2010 avait donné un chiffre de 7 % (réf. 5).

En Amérique du Nord, une série d'enquêtes ont révélé des hausses allant de 0 % à 120 %. Une étude réalisée récemment à Montréal a constaté par exemple des hausses de valeur de 13 % dans un rayon de 500 m d'une station de métro, de 10 % dans un rayon de 1 km et de 5 % dans un rayon de 1,5 km (réf. 6).

Enfin, en mars 2013, une étude publiée aux États-Unis par la National Association of Retailers et l'Association of Public Transit Authorities, a révélé qu'en moyenne, dans la zone étudiée, le développement aux abords des stations avait été supérieur de 41,6 % au développement dans l'ensemble de la région. Les stations ont également eu un effet sur la résilience de la valeur immobilière, qui s'est révélée être favorablement sensible à une bonne mobilité et à une haute fréquence de service. Enfin, l'étude a révélé que les ménages habitant aux abords d'une station se trouvent plus facilement du travail et ont des frais de déplacement moins élevés que les ménages de la région dans leur ensemble (réf. 7).

Le projet de réseau ferroviaire Crossrail est un des plus importants projets d'infrastructure entrepris au Royaume-Uni à ce jour. Le réseau réduit le temps nécessaire pour traverser Londres et la congestion, de même qu'il améliore la mobilité. De plus, il illustre le phénomène de l'augmentation de la valeur des terrains et des immeubles au voisinage des stations.

- Une étude réalisée par l'agence immobilière GVA a révélé qu'entre 2008 et 2013, 41 % des demandes de permis de construction concernant un terrain situé dans un rayon d'un kilomètre d'une gare du réseau Crossrail mentionnaient le nouveau réseau ferroviaire comme argument à l'appui du projet de construction et que ces demandes représentaient 53 millions de pieds carrés de locaux à usage résidentiel, industriel et commercial.
- Crossrail pourrait contribuer à faire augmenter de 5,5 milliards £ la valeur globale de l'immobilier résidentiel et de l'immobilier d'entreprise le long de son tracé sur la période allant de 2012 à 2021, selon l'étude réalisée par GVA pour le compte de Crossrail.
- La valeur en capital des locaux d'entreprise situés aux abords des stations de Crossrail dans le centre de Londres devrait connaître un supplément de hausse de 10 % par rapport à une projection de hausse de base déjà importante sur un horizon de 10 ans.
- La valeur en capital des locaux résidentiels situés aux abords des stations de Crossrail devrait enregistrer des suppléments de hausse de 25 % et de 20 % respectivement dans le centre de Londres et dans les banlieues, toujours par rapport à une projection de hausse de base (réf. 8).

Station Canary Wharf – Impression architecturale (réf. 8).

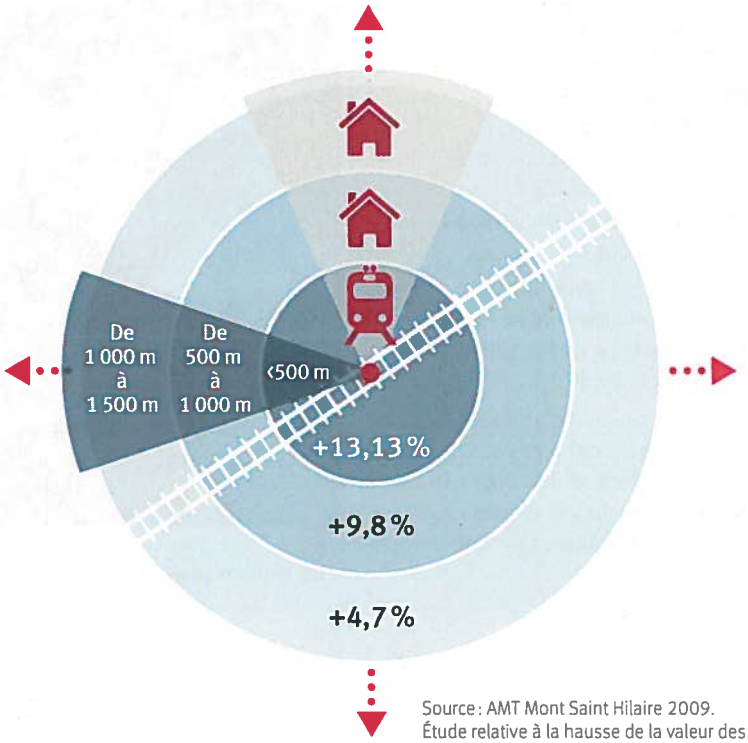
Plusieurs exemples à travers le monde illustrent le fait que le transport collectif fait augmenter la valeur des terrains et des immeubles au voisinage des stations et comment une stratégie de CPVF bien conçue et bien exécutée peut faire en sorte qu'une proportion importante de la hausse de valeur puisse servir à financer le transport collectif.

Où et quand la CPVF fonctionne-t-elle ?

Lorsque les gens se rendent compte qu'une chose a de la valeur, ils n'hésitent pas à payer pour l'obtenir. À titre d'exemple, ils vont souvent payer plus cher pour une maison située dans un endroit qui leur donnera accès à une bonne école ou pour un logement avec vue sur un plan d'eau. De la même façon, si une maison assure un bon accès aux lieux qui intéressent les ménages et les entreprises, elle se vendra plus cher. C'est un fait que l'industrie et le marché immobiliers connaissent et acceptent et que d'abondantes données illustrent comme en témoignent les exemples cités plus haut. En d'autres termes, l'argent traduit la valeur générée par l'amélioration de l'accessibilité, et l'accessibilité rend le terrain plus productif, c'est-à-dire qu'elle le rend plus précieux.

La hausse de la valeur due à l'amélioration de l'accessibilité varie selon les conditions locales. Dans le cas du prolongement de la ligne de système léger sur rail (SLR) de Croydon dans le sud de Londres, par exemple, la hausse de la valeur a été négligeable parce que le secteur possédait déjà de bonnes liaisons de transport collectif (réf. 9). Dans d'autres cas, cependant, lorsqu'il existe un problème aigu de congestion et que l'amélioration de l'accès entraîne une transformation, la hausse de la valeur peut être importante. Selon une hypothèse prudente, la hausse de la valeur des terrains et des immeubles situés dans un rayon de 1 km d'une station est de 10 % lorsque la station est reliée aux lieux où les gens souhaitent se rendre et que le marché immobilier est orienté à la hausse. Selon une étude de Parsons Brinkerhoff, la hausse de la valeur en capital se situe entre 10 % et 50 % (réf. 10). Il s'agit, pour le propriétaire foncier ou pour le promoteur immobilier, d'un apport d'argent, d'un supplément de profit qu'il n'obtiendra que si l'accessibilité est améliorée. Il est donc raisonnable de répartir le supplément de profit généré par une station entre l'organisme qui construit les gares et les propriétaires fonciers afin d'assurer la construction des gares. Il faut que les deux acteurs collaborent pour qu'une gare soit construite. Cela est particulièrement vrai lorsque les demandes visant à obtenir un accès se multiplient et que les fonds publics susceptibles d'être affectés à la construction d'équipements d'infrastructure sont limités. La plus grande partie de la hausse de valeur sera générée dans un rayon de 1 km de l'équipement de transport. Il est donc nécessaire d'explorer les possibilités de captation de la hausse de valeur dans le cadre d'un partenariat entre les secteurs public et privé. Cela veut dire que la CPVF exige une collaboration entre les acteurs de l'industrie immobilière et le secteur public, lequel a dans une grande mesure la responsabilité de fournir les moyens de transport.

Le graphique reproduit ci-dessous, tiré de l'étude menée à Montréal, illustre ce fait.



Source : AMT Mont Saint Hilaire 2009.
Étude relative à la hausse de la valeur des immeubles résidentiels.

Si la CPVF est une si bonne chose, pourquoi n'y a-t-on pas recours ?

Une partie du problème réside dans le fait que le système actuel est incapable de libérer et conséquemment de capter la valeur ajoutée. Cela tient d'une part à la réglementation et aux procédures instituées en vue d'assurer l'indépendance du processus de planification ainsi que la transparence et l'équité dans les dépenses publiques, d'autre part à l'exigence de confidentialité des promoteurs immobiliers. Du point de vue du secteur privé, il n'est ni possible ni souhaitable de délivrer des permis de construire sur la base d'une promesse du promoteur de financer une infrastructure de transport. Du point de vue du secteur privé, il est difficile pour les promoteurs de collaborer les uns avec les autres en raison des caractères confidentiel et concurrentiel de l'activité de promotion immobilière. Les nouvelles méthodes de CPVF visent à libérer la richesse créée et à surmonter ces difficultés tout en préservant la confidentialité ainsi que l'intégrité publique. Les avantages sont substantiels, et le caractère équitable d'un partage de la richesse créée ne fait aucun doute. Par ailleurs, il semble juste que les bailleurs de fonds d'une ligne de transport nouvelle, génératrice d'un supplément de richesse et de profit, perçoivent une partie de ce supplément. Il existe donc un argument de poids en faveur d'un partage plus équitable entre ceux qui créent la richesse et ceux à qui la richesse profite.

Don Riley, promoteur spécialisé dans l'immobilier d'entreprise, également propriétaire d'immeubles à usage commercial et industriel, qui a son siège social à Londres, a tiré des millions de £ du prolongement de la ligne Jubilee dans la partie sud de Londres. M. Riley possédait de nombreux immeubles dans le secteur délabré de Southwark, immeubles qui ont vu leur valeur grimper en flèche lorsque la nouvelle ligne de métro est entrée en service. Cette hausse de valeur a découlé du fait que le quartier de Southwark a ainsi été relié au centre de Londres ainsi qu'au quartier des affaires, à Canary Wharf, aux quartiers portuaires et à l'aéroport de la ville. M. Riley a écrit un livre intitulé « Taken for a Ride », dans lequel il chiffre les hausses de valeur foncière et de valeur locative générées par la construction de la nouvelle ligne de métro au voisinage des stations. Il a compilé les valeurs enregistrées au fil du temps. Heureux d'avoir bénéficié de telles retombées, il est toutefois convaincu qu'une partie de la richesse créée aurait dû revenir à ceux qui ont créé cette richesse – à savoir les bailleurs de fonds de la ligne Jubilee – en dernière analyse les contribuables (réf. 11).

« Une partie du problème réside dans le fait que le système actuel est incapable de libérer et conséquemment de capter la valeur ajoutée. Cela tient d'une part à la réglementation et aux procédures instituées en vue d'assurer l'indépendance du processus de planification ainsi que la transparence et l'équité dans les dépenses publiques, d'autre part à l'exigence de confidentialité des promoteurs immobiliers. »

Pourquoi la CPVF est-elle importante et quels en sont les avantages ?

La CPVF est importante à Montréal pour les raisons suivantes

- Elle aide à réaliser la croissance économique d'une manière respectueuse de l'environnement.
- Elle aide à créer une région métropolitaine plus compétitive ainsi qu'une meilleure qualité de vie pour la population et les entreprises.
- Elle aide à construire des collectivités locales plus durables, plus saines.
- Elle aide à réduire le coût de la vie.
- Elle aide à réduire la congestion et la pollution.

La croissance de la région de Montréal

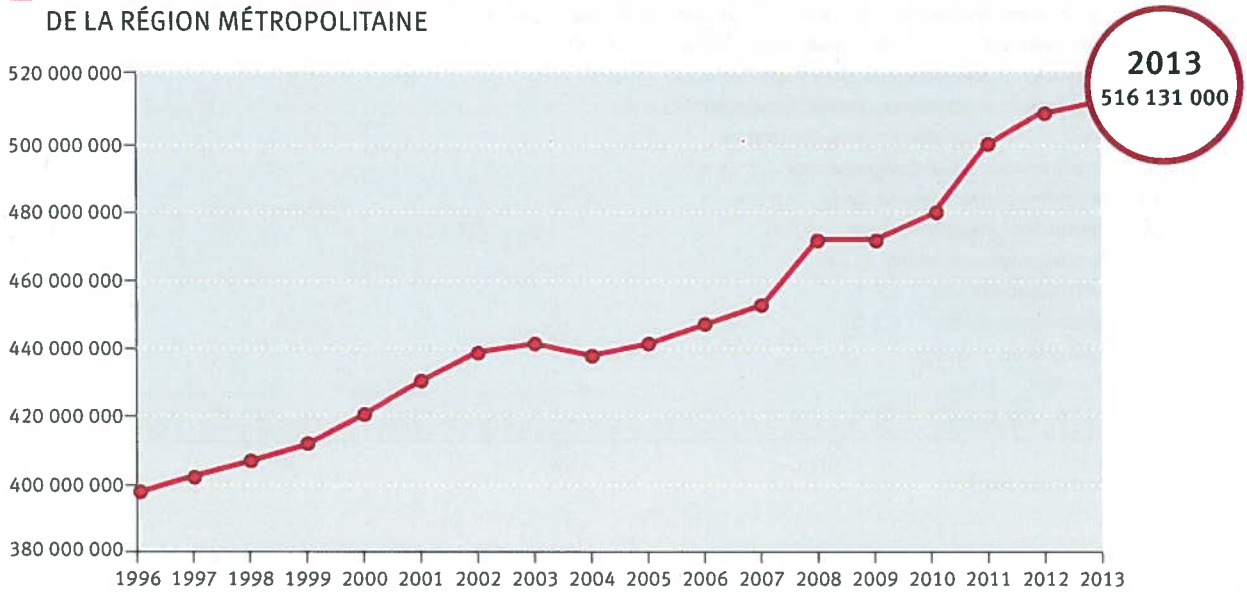
On prévoit que la population du Grand Montréal passera de 3,8 millions d'habitants en 2010 à 4,3 millions en 2031, ce qui représente une augmentation de 750 000 habitants par rapport à 2006. La population vieillit, et le vieillissement s'accélérera entre aujourd'hui et 2031, quand le quart de la population aura 65 ans ou plus. Le plus fort taux de croissance de la population s'observe dans les secteurs où la densité résidentielle est faible, et le taux d'utilisation d'une automobile, élevé (réf. 12). Le taux de croissance du parc automobile est deux fois plus élevé que celui de la population. L'accroissement du nombre d'automobiles s'est chiffré à 300 000 sur la période allant de 1998 à 2008. Cet accroissement entraîne une congestion croissante du réseau routier et il affaiblira la compétitivité économique de Montréal à l'échelle nationale et à l'échelle internationale. Le corridor de l'autoroute 10, par exemple, l'une des voies de la région dont le débit est le plus élevé, subit cette pression. L'achalandage du pont Champlain a augmenté de 88 % sur une période de seulement 20 ans, soit entre 1978 et 1998. On estime que l'achalandage actuel tourne autour de 49 millions d'automobiles par année (réf. 13 et 14), ce qui fait du pont Champlain le pont qui a l'achalandage le plus élevé au Canada. Il en résulte que l'achalandage en heure de pointe va en augmentant et que l'heure de pointe s'allonge sans cesse.

Une telle situation ne peut durer, dans quelque ville que ce soit, et rend nécessaire un réseau de transport collectif de premier ordre en complément du réseau routier. Aucune ville dans le monde n'a réussi à combler ses besoins en transport au moyen de la seule automobile particulière. C'est une simple question d'arithmétique.

Le taux d'occupation moyen d'une automobile particulière dépasse à peine 1 personne, ce qui veut dire qu'il y a plus de sièges vides que de sièges occupés dans le réseau. Par ailleurs, le nombre d'automobiles nécessaires au transport des personnes nécessite beaucoup et de plus en plus d'espace routier. Cet espace de circulation ne peut provenir que de l'espace servant aux échanges entre les gens, en l'occurrence le seul autre espace disponible dans une ville. Le phénomène conduit à une érosion de la compétitivité, car la ville est dominée par l'espace de circulation, et le poumon de sa vie économique et sociale, l'espace d'échanges, régresse à un niveau non viable. La ville perd de son pouvoir d'attraction, la congestion prend de l'ampleur, la pollution s'aggrave, la qualité de vie diminue, et la ville s'enferme dans le cercle vicieux du déclin. La seule façon de construire une ville prospère est de trouver un équilibre entre un réseau de transport collectif de premier ordre, un réseau piétonnier de premier ordre et un réseau routier de premier ordre. Cela permet d'obtenir un maximum de productivité de l'espace de circulation et un maximum d'espace d'échanges et de créer une ville qui soit dynamique, compétitive et pourvue d'un fort pouvoir d'attraction. Heureusement, Montréal possède un centre-ville dynamique, dense, où plusieurs immeubles importants sont en construction. Ce quartier est animé et il fonctionne bien. Cependant, afin de conserver cet atout et de renforcer son pouvoir d'attraction, Montréal a besoin d'un réseau de transport collectif de premier ordre, qui contribuera à préserver cette qualité et cette compétitivité dans un contexte de croissance de la population et de pression grandissante sur le réseau routier.

Il faut reconnaître que Montréal a déjà un réseau de transport collectif de premier ordre, qui est bien utilisé et qui présente d'excellents chiffres d'achalandage, comme l'illustrent les graphiques qui suivent. Il s'agit d'une bonne base pour le réseau de transport dont la ville doit maintenant se doter.

ACHALANDAGE DES RÉSEAUX DES ORGANISMES DE TRANSPORT DE LA RÉGION MÉTROPOLITAINE

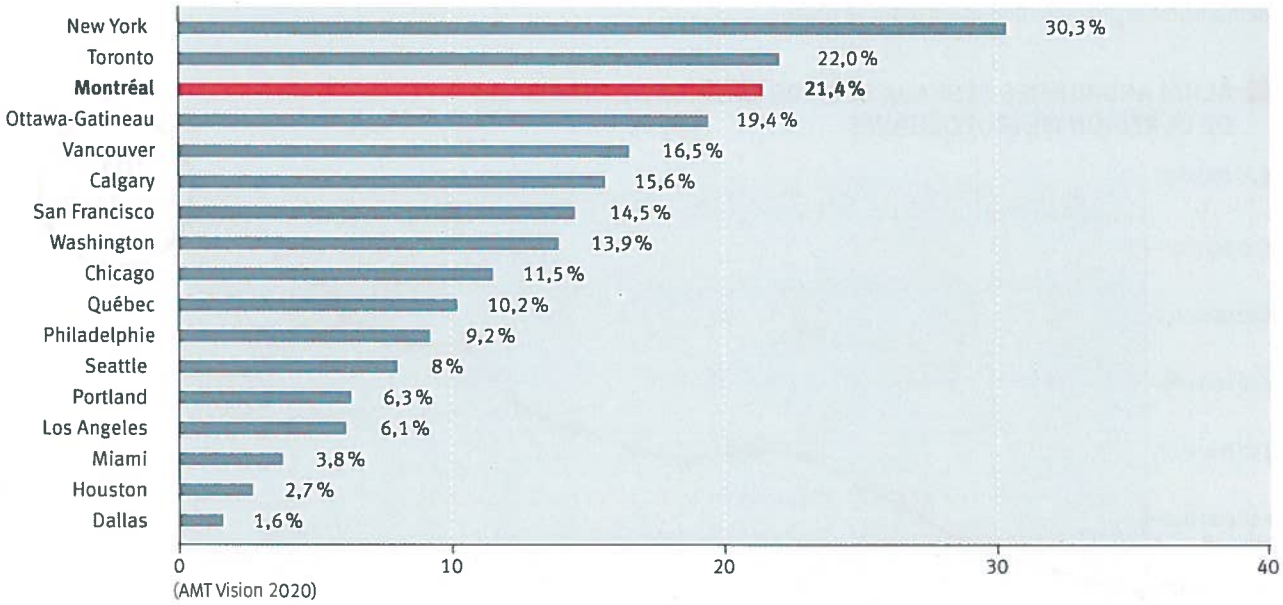


(Rapport annuel 2013 de l'AMT)

ACHALANDAGE DE LA STM

(Rapport d'activité 2013 de la STM)

COMPARAISON INTERNATIONALE DE LA PART MODALE DU TRANSPORT COLLECTIF – 24H



(AMT Vision 2020)

Cela n'a pas toujours été le cas. La part de marché du transport collectif a diminué, pour ensuite se stabiliser à 22 % entre 1998 et 2003, bien que le taux de possession d'une automobile a diminué de 10 % sur cette période. Il est bon de noter que cette évolution favorable s'est poursuivie : le nombre de trajets en transport collectif a en effet augmenté de 15 % sur la période allant de 2003 à 2008. Sur cette même période, le nombre de trajets en automobile a connu une baisse pour la première fois, en l'occurrence de 1 %. La part du transport collectif était de 25 % en 2008. Il s'agit de l'une des parts de marché les plus élevées en Amérique du Nord, seules New York et Toronto ayant des parts plus élevées.

De plus, l'autorité responsable des transports collectif à Montréal, la STM, est considérée comme un chef de file mondial. Elle a reçu de nombreux prix à l'international, tels le prix d'excellence de la Government Finance Officers Association (GFOA) et les prix attribués par l'American Public Transportation Association (APTA), dans différentes catégories. Enfin, elle est fort bien notée par des agences de notation indépendantes.

Dans le cadre du processus en 7 étapes que décrit le document Vision 2020 publié par l'AMT (réf. 15), on a interrogé les répondants à propos du transport. 82 % des répondants ont indiqué que la congestion constitue un problème majeur, et 66 % que le transport collectif est la solution à ce problème. Ils ont également indiqué que le transport collectif doit être moins coûteux, plus rapide et plus relaxant que le transport automobile. Il s'agit d'une bonne base de soutien au transport collectif. Cette enquête menée auprès de la population du Grand Montréal a eu lieu entre le 26 octobre et le 3 décembre 2010.

Le financement du transport collectif a augmenté de façon importante depuis 1996 suite à la création d'un premier dispositif fiscal métropolitain autonome comportant des prélèvements exclusivement destinés à financer le transport collectif (taxe sur l'essence, droit sur l'immatriculation des véhicules automobiles et 1 cent par 100 $ de richesse foncière). Au total, les fonds destinés au transport collectif sont passés de 1 milliard de dollars en 1996 à 1,6 milliard de dollars en 2010. Toutefois, la hausse des coûts du transport collectif et la nécessité croissante pour la population et les entreprises de disposer d'un réseau de transport collectif de premier ordre ont fait en sorte que les sources de financement actuelles ne sont plus suffisantes. Le budget d'investissement nécessaire à la réalisation du plan de transport collectif Vision 2020 est de l'ordre de 17 milliards de dollars. Il y a donc lieu de trouver des sources de financement en complément des sources publiques si l'on veut pouvoir réaliser ce plan.

La région métropolitaine de Toronto et de Hamilton (la Greater Toronto and Hamilton Area ou GTHA) a plusieurs caractéristiques et contraintes en commun avec le Grand Montréal. Aussi est-il intéressant de noter que le rapport *Making the Move : Choices and Consequences* du Comité consultatif sur le financement du transport collectif, présidé par Anne Golden, a recommandé que « ...Metrolinx adopte une approche proactive et collaborative vis-à-vis du secteur privé en vue de tirer profit de la hausse de la valeur foncière qui découlera de la réalisation des projets de transport rapide des usagers Next Wave » (recommandation 6, décembre 2013). Le Comité regroupe 13 personnes occupant des postes importants au sein des principaux groupes d'intervenants de la GTHA, groupes provenant de tous les horizons politiques. Ce type de comité renvoie au projet de forum mentionné plus loin dans le document. Le Comité a également recommandé que soit créé un fonds à vocation exclusive, protégé, destiné à regrouper l'ensemble des sommes perçues et que tous les projets soient soumis à une analyse de rentabilité rigoureuse et approfondie. Le présent document appuie ces deux points.

Consciente de la volonté des municipalités de tirer profit des possibilités créées par les gares terminales d'autobus, les stations de métro et les gares ferroviaires, l'AMT vise à construire un réseau de transport collectif qui contribue à un développement urbain durable. Cela comprend l'aménagement axé sur le transport collectif (« Transit Oriented Development » ou « TOD »). Cela veut dire que le cadre politique est déjà là pour soutenir les méthodes de CPVF renforcées par la constatation d'une insuffisance de fonds pour réaliser la vision 2020 de l'AMT. Le document Vision 2020 attire en effet l'attention sur des mécanismes permettant de capter la plus-value foncière.

La CPVF est plus facile à mettre en œuvre en partenariat avec des propriétaires de premier ordre, réputés et solvables

Il est plus facile de mettre en œuvre des dispositifs de CPVF lorsque les autorités responsables du transport collectif peuvent négocier avec des partenaires immobiliers de premier ordre, réputés et solvables, ce qui est une des caractéristiques distinctives de Montréal. Le fait que certaines des plus importantes entreprises immobilières de Montréal appartiennent à d'importants investisseurs institutionnels devrait assurément favoriser des négociations équitables entre les secteurs public et privé, de même que contribuer à assurer l'acceptabilité publique.

La CPVF aide à construire des villes plus compétitives et de meilleure qualité

La création de collectivités durables, à vocation mixte, aux abords des stations comporte toute une série d'avantages au-delà du financement par CPVF. Tout indique que la hausse de la valeur des terrains et des immeubles au voisinage des stations par suite de l'amélioration de l'accessibilité due à une nouvelle ligne de transport peut être importante et qu'il vaut la peine de chercher à la capter à des fins de financement de la construction de nouvelles lignes de transport. Par ailleurs, un aménagement axé sur le transport collectif aux abords des stations contribue à un accroissement de la fréquentation des moyens de transport et conséquemment des recettes de la ligne de transport et de la viabilité des services locaux, ce qui renforce la qualité de vie et le pouvoir d'attraction et aide à créer une collectivité locale. Un tel aménagement ciblé contribue enfin à réduire la congestion au profit des usagers de la route, ceux du secteur privé comme ceux du secteur public, y compris pour ce qui est du transport des marchandises. Il y a donc, par conséquent, de nombreux avantages à mettre en œuvre une stratégie de CPVF qui aille au-delà du financement du transport collectif.

La CPVF aide à créer des collectivités locales durables, plus saines

Afin de maximiser le potentiel de CPVF, il doit y avoir un lien clair avec la planification de l'occupation des sols, l'urbanisation, la construction de collectivités locales et la proximité des services. Cela veut dire qu'il doit y avoir une politique de planification et un cadre réglementaire à l'échelon municipal favorisant un aménagement axé sur le transport collectif aux abords des stations et une promotion de la densification aux abords de ces gares pour soutenir les collectivités locales et les services dont elles ont besoin. Cela doit également s'accompagner d'un processus d'évaluation des projets continu qui tienne compte de l'avantage que représentent la CPVF et les collectivités locales viables, qui intègre les méthodes d'évaluation actuelles et qui les perfectionne.

Les études révèlent que certaines tendances mondiales au chapitre du mode de vie renforcent le potentiel d'aménagement axé sur le transport collectif et conséquemment l'incidence du financement par CPVF. Une étude du bulletin TOD and Land Use Newsletter au New Jersey (réf. 16) révèle que les jeunes professionnels ayant entre 25 et 35 ans accordent de plus en plus d'importance à la qualité de vie en milieu urbain et souhaitent vivre près d'une station qui contribue à une meilleure qualité de vie. Les gens de la génération du baby-boom, qui s'orientent vers des logements plus petits, optent également pour les commodités du centre-ville et les logements situés à proximité d'une station.

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« Il doit y avoir une politique de planification et un cadre réglementaire à l'échelon municipal favorisant un aménagement axé sur le transport collectif aux abords des stations et une promotion de la densification aux abords de ces gares pour soutenir les collectivités locales et les services dont celles-ci ont besoin. »

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- Les changements sociaux visent les générations plus jeunes également. En effet, des recherches montrent que le pourcentage de jeunes adultes possédant un permis de conduire est en baisse en Amérique du Nord, en Europe et en Australie. Par exemple, l'Université du Michigan a publié des données faisant état d'une réduction de 5 % du nombre de personnes âgées de 20 à 24 ans titulaires d'un permis de conduire, entre 2004 et 2008 (réf. 17). Ces nouvelles générations n'ont pas grandi à une époque où la voiture était reine et où les jeunes adultes n'aspiraient qu'à une seule chose, s'acheter une voiture tape-à-l'œil. Élevés à l'ère de l'information, ils ne voient pas la nécessité d'avoir une voiture dans les zones urbaines. Posséder le dernier modèle téléphone intelligent est plus important que d'avoir un permis de conduire. Vous ne pouvez pas naviguer sur les réseaux sociaux au volant d'une voiture ! Cette situation sera particulièrement vraie pour les gens de la génération Z – les personnes nées après 2002.
- En ce qui concerne la génération Y (les gens nés entre 1979 et 1995) l'utilisation du transport collectif a augmenté de 40 %, selon un rapport du Urban Land Institute (réf. 18).
- Sur le plan des changements en matière de style de vie, la Federal Highway Administration a montré que la demande de logements compacts dans un rayon de 0,5 miles d'une station devrait atteindre plus de 14,8 millions de ménages d'ici 2025, par rapport à 6,2 millions en 2000 (réf. 19). Des preuves démontrent aussi qu'avec l'augmentation du prix de l'essence, les logements sans accès au transport collectif sont plus susceptibles de perdre de la valeur comparativement à ceux situés au centre-ville ou près d'une station. Cette situation a été clairement illustrée dans les villes américaines pendant la dernière crise du carburant. Ainsi, à mesure qu'augmentent la congestion et le coût de l'essence, qu'on accorde une importance accrue à un système fiable de mobilité durable et que les attentes en matière de qualité de vie s'accentuent, la pertinence et l'importance des occasions de TOD et de CPVF augmenteront également (réf. 20).

« Il faut aussi examiner de quelle façon la CPVF pourrait faciliter la desserte des centres commerciaux de banlieue existants et proposés, de manière à les relier aux zones résidentielles, au centre-ville et à d'autres centres clés, comme des pôles d'emploi ou des attractions. Il est plus difficile de capter la hausse de la valeur dans le cas de travaux d'aménagement en cours, mais un moyen d'y parvenir consiste à réduire les espaces de stationnement pour intensifier l'utilisation du terrain. »

Autres avantages

Le TOD autour de stations offre d'autres avantages également. Plusieurs recherches ont été effectuées pour comparer le coût de la vie lié au TOD à celui associé à la vie de banlieue, qui repose sur la voiture. Ces recherches font état d'un coût de la vie moindre dans le cas des ouvrages TOD, et cet écart ne peut que s'accroître à l'avenir, à mesure que le prix du pétrole et la congestion augmentent. L'Université Griffith de Brisbane a élaboré une série de facteurs de dépendance au pétrole associés à la vie de banlieue axée sur la voiture; ces facteurs illustrent la vulnérabilité de ces logements à l'égard des prix du marché (réf. 21).

De plus, le fait de vivre dans des logements de type TOD a des effets bénéfiques sur la santé des personnes visées, les encourageant à marcher et à utiliser le vélo davantage. La densité des cellules d'habitation renforce le caractère durable des magasins et des services, ce qui accroît le dynamisme et la viabilité commerciale à l'échelle locale : un cercle vertueux s'installe.

Les ouvrages TOD réduisent le nombre de kilomètres parcourus en raison d'un accès amélioré aux services locaux et à d'autres services sur une plus longue distance au moyen du transport collectif. Ainsi, les gens marchent et pédalent davantage pour atteindre les magasins, bureaux et autres services locaux, et l'efficacité de l'infrastructure, tant routière que ferroviaire, s'en trouve améliorée. En conséquence, le coût du transport diminue et la productivité augmente. Cet élément représente un facteur clé pour assurer le succès et le caractère concurrentiel de la ville à l'avenir, et il favorise le développement d'une économie de la connaissance visant les zones TOD et de transport collectif.

Définition de la CPVF

Il importe de fournir une définition claire de la CPVF dans le contexte de ce document, car elle se présente de diverses façons. Comme son nom l'indique, la CPVF consiste à capter, d'une façon ou d'une autre, la hausse de la valeur foncière, mais cela entraîne certaines questions. Cette hausse de la valeur est-elle mesurée selon un ensemble de facteurs, ou bien seulement en fonction de l'accessibilité accrue générée par une amélioration des services fournis en matière de mobilité ? Si l'on établit que la CPVF désigne la valeur générée par l'amélioration de la mobilité, cette définition correspond à une réalité plus claire. Cependant, on pourrait affirmer que la valeur générée par la délivrance de permis de planification ou d'intensification des travaux d'aménagement autour d'installations est valide, ce qui élargit la définition. Même si cette dernière se limite à la mobilité, s'agit-il de la mobilité dans son ensemble ou est-il question du transport collectif seulement ? Il faut établir une définition claire.

Dans le cadre du présent document de discussion, la CPVF désigne la hausse de la valeur des terrains et des propriétés situés autour de stations, hausse qui découle du service de transport collectif. Ainsi, ce document met l'accent sur le financement par CPVF destiné au transport collectif, qui représente un besoin important à Montréal. Une telle définition de la CPVF ne signifie pas que d'autres formes de production de richesse ne peuvent pas agir parallèlement à la hausse de la CPVF liée au transport collectif. En effet, la hausse associée à la délivrance de permis de planification ou d'intensification de l'utilisation des sols peut générer des fonds supplémentaires et des avantages mutuels.

Cette définition donne lieu à deux types généraux de méthodes de CPVF : celles fondées sur le développement immobilier et celles fondées sur la fiscalité.

Méthodes fondées sur le développement immobilier

Les principales caractéristiques des méthodes fondées sur le développement immobilier sont décrites ci-dessous.

- Elles ont le potentiel de recueillir des fonds beaucoup plus importants que n'importe quelle solution axée sur la fiscalité à l'heure actuelle.
- Elles associent directement au projet les apports au titre du financement par CPVF, ce qui génère des profits accrus, et ce lien direct s'avère intéressant pour les promoteurs.
- Les apports réalisés par CPVF doivent être convenus le plus tôt possible. En effet, les gains les plus importants sont réalisés durant les premières étapes du processus de développement, avant la prise d'options et le transfert de la propriété du site. Tous les apports convenus à cette étape-ci peuvent être comptabilisés dans le cadre du processus d'aménagement subséquent. À mesure que le temps passe et que le degré de certitude augmente, la valeur baisse, car les promoteurs prévoient des hausses de la valeur foncière autour des nouvelles installations. Ainsi, la CPVF doit être assurée avant d'établir l'emplacement de la ligne et des stations.
- On doit avoir l'impression qu'il existe une insuffisance au chapitre du financement public relativement à un projet particulier reconnu par le secteur privé. Si les propriétaires fonciers et les promoteurs pensent que les nouvelles installations seront totalement financées par le secteur public, ils seront réticents à contribuer au financement par l'entremise de gains liés à la CPVF. Cependant, s'ils croient que le secteur public ne peut pas ou ne veut pas financer complètement le projet et que le seul moyen d'assurer des profits accrus consiste à le financer conjointement avec le secteur public, ils participeront.
- Les méthodes fondées sur le développement dépendent du marché et peuvent être perçues comme offrant plus d'avantages que les solutions axées sur la fiscalité. Le secteur privé n'aime aucune forme d'imposition et ces méthodes permettent d'harmoniser les intérêts de tous les intervenants. Du point de vue des autorités municipales et provinciales, elles offrent une nouvelle source de financement qui s'ajoute à celui du secteur public, ce qui donne une marge de manœuvre. De plus, elles permettent de se montrer financièrement responsable aux yeux des autorités locales, car elles donnent l'impression qu'on est à la recherche de sources de financement de rechange qui ne reposent pas sur une hausse des impôts.

Il existe deux catégories de méthodes fondées sur le développement immobilier : celle où le fournisseur de services de transport collectif participe directement au développement immobilier et celle où le fournisseur travaille en partenariat avec l'industrie du développement immobilier, sans participer directement aux activités.

Dans la première catégorie, on retrouve les méthodes adoptées par la Mass Transit Railway Corporation (MTR) de Hong Kong et la Japan Railway Construction Public Corporation (JRCA), ainsi que celles appliquées dans le cadre du projet Oerstadt à Copenhague. Ces exemples sont décrits en détail plus loin. Si les autorités de Montréal ou de Québec participent activement à l'application de méthodes fondées sur le développement immobilier, elles auront une maîtrise plus directe et obtiendront des récompenses potentiellement plus importantes. Cependant, ces méthodes exigent de l'expérience et de l'expertise en matière de développement immobilier, car les risques commerciaux peuvent être grands, mais on peut les limiter en embauchant les bons employés ou en faisant appel aux experts appropriés. Toutefois, en ce qui concerne le projet Oerstadt de Copenhague, dans le cadre duquel tout le terrain appartenait à l'État, le marché a changé, le coût du transport a dépassé de loin les prévisions et le développement projeté a pris beaucoup plus de temps que prévu. Habituellement, les autorités responsables du transport collectif ne sont pas prêtes à assumer le rôle de promoteur et des problèmes surviennent à l'égard des risques et des fonds publics. La constitution de réserves foncières est potentiellement attrayante, mais elle comporte un profil de risque/rémunération important qui correspond difficilement au secteur public. En effet, certains affirment que la participation active dans l'industrie du développement immobilier ne fait pas partie du rôle du secteur public, mais la situation change si l'autorité responsable du transport est propriétaire du terrain entourant la ligne. Dans ce cas, l'autorité peut être bien placée pour participer au développement immobilier et conclure des partenariats de développement conjoint. Comme il est indiqué plus haut, ces risques doivent faire l'objet d'une évaluation attentive et, s'il y a lieu, ils doivent être réduits de manière à limiter au minimum l'exposition des autorités publiques.

La deuxième sous-catégorie de méthodes fondées sur le développement immobilier repose sur la conclusion volontaire d'un partenariat avec le secteur privé où chaque partenaire comprend les activités de l'autre et accepte de partager l'avantage mutuel. Cet avantage réciproque découle du fait que les autorités publiques fournissent l'achalandage qui génère la hausse de la valeur en raison de la mobilité accrue, tandis que le propriétaire foncier/promoteur est propriétaire du terrain et des droits d'aménagement. Les parties sont interdépendantes. Est alors formé un partenariat volontaire où la nouvelle valeur créée par l'achalandage est équitablement distribuée entre le propriétaire foncier/promoteur et le fournisseur pour aider à générer l'achalandage qui produira la valeur. Des ententes relatives à la forme appropriée d'apport du secteur privé sont négociées en fonction des caractéristiques du site et des liaisons assurées par les installations de transport. Un exemple de cette approche adoptée à Édimbourg, en Écosse, est décrit plus loin. L'avantage des méthodes de CPVF fondées sur le développement volontaire est qu'elles n'exigent pas l'adoption de nouvelles lois et qu'elles s'appliquent à l'industrie de l'aménagement. Cependant, elles fonctionnent uniquement lorsque le secteur privé est convaincu que les installations de transport ne peuvent pas être totalement financées par des fonds publics. Cet élément doit être souligné et il façonne les projets choisis sur le plan de l'application des mesures de CPVF.

Résumé des principales caractéristiques des méthodes de CPVF fondées sur le développement immobilier :

- Elles ont le potentiel de recueillir des fonds par CPVF beaucoup plus importants que les autres méthodes.
- Elles associent directement les intervenants qui versent des sommes et ceux qui en profitent.
- Elles sont mieux adaptées aux nouvelles infrastructures de transport collectif.
- Plus les méthodes sont adoptées tôt, plus le potentiel de financement est élevé.
- La plus grande part de la valeur par CPVF est générée dans un rayon de 1 km à partir de la station.
- Les promoteurs doivent avoir l'impression qu'il existe une insuffisance au chapitre du financement public.
- Les méthodes fondées sur le développement volontaire ne nécessitent pas l'adoption de nouvelles lois : elles peuvent être appliquées dès maintenant.
- Elles dépendent du marché et sont axées sur le partage de la valeur supplémentaire générée par l'entremise de la nouvelle desserte du transport collectif.

Méthodes fondées sur la fiscalité

L'autre catégorie principale d'applications de la CPVF vise les méthodes fondées sur la fiscalité. Ces dernières tentent de capter la plus-value découlant d'une accessibilité accrue au moyen de différentes formes de taxes ou de prélèvements à l'égard des projets d'aménagement achevés. Ces prélèvements peuvent être appliqués à des projets en cours de réalisation, mais cela est plus difficile, et ils peuvent prendre diverses formes : districts d'évaluation spéciale, frais d'aménagement, financement par de nouvelles taxes, taxes sur la valeur des terrains, taxes sur l'impact, ainsi que d'autres formes de taxes/prélèvements plafond. Toutes ces méthodes sont décrites en détail dans le rapport de Trillium Business Strategies Inc. intitulé « Land value capture as a tool to finance public transit projects in Canada », publié en mars 2009 (réf. 23). Ces méthodes exigent habituellement l'adoption de lois, sauf s'il s'agit de prélèvements volontaires, comme dans le cas de zones d'amélioration locale où les résidents et les entreprises votent pour qu'un prélèvement soit mis en place. Ces méthodes peuvent être impopulaires auprès du secteur privé et il est déjà arrivé qu'elles entraînent l'élimination ou la déviation des travaux d'aménagement dans les zones faisant l'objet de l'imposition. Ces méthodes peuvent également s'avérer des instruments inefficaces si on essaie de produire de la valeur là où il n'y en a pas, et elles peuvent faire en sorte que d'importantes hausses de la valeur soient manquées, car elles tiennent compte de tarifs de l'impôt fixes. En outre, ces méthodes peuvent avoir un effet dissuasif au chapitre du développement immobilier ou favoriser les projets dans les secteurs plus rentables d'une ville, au détriment des zones plus pauvres. Par exemple, il existe des preuves que lorsque des districts d'impôt sont établis autour de stations pour capter la hausse de la valeur, les promoteurs retardent leurs plans, font dévier leurs efforts vers d'autres zones où l'imposition ne s'applique pas ou construisent juste en dehors de la limite d'imposition, comme dans le cas du réseau de transport rapide LUAS de Dublin et autour de la ligne de métro Sheppard à Toronto. Néanmoins, ces méthodes peuvent être utilisées de manière efficace et elles ont été appliquées avec succès dans le monde : on en retrouve des exemples à la fin de ce document. Les systèmes basés sur la fiscalité sont des instruments imprécis qui n'établissent pas de lien direct avec les personnes qui réalisent les gains directs. Cela signifie qu'il est plus difficile d'établir la chaîne de valeur entre les payeurs et les bénéficiaires, ce qui peut rendre plus complexe l'application des méthodes fondées sur la fiscalité.

Par le passé, le gouvernement britannique a tenté de mettre en place un impôt foncier et d'aménagement, mais, jusqu'à présent, sans succès. Actuellement, les autorités locales britanniques essaient de mettre en place le prélèvement communautaire pour les infrastructures et il existe deux courants d'opinion sur la proposition. Le premier soutient que les frais d'aménagement ont connu quatre échecs depuis 1947, sont mauvais par principe et ralentissent la croissance économique. Selon le deuxième, des frais d'aménagement clairs et nets pourraient représenter un avantage réel, mais des changements doivent être apportés à la structure actuelle (réf. 24).

Résumé des principales caractéristiques des méthodes de CPVF fondées sur la fiscalité :

- Elles exigent habituellement l'adoption de nouvelles lois.
- La fiscalité est un instrument imprécis qui peut briser le lien de confiance entre les payeurs et les bénéficiaires.
- Le secteur privé n'aime pas l'imposition et voit moins de désavantages dans les méthodes fondées sur le développement immobilier.
- Elles peuvent éliminer, retarder ou faire dévier le développement immobilier dans les zones faisant l'objet de l'imposition.
- Elles peuvent représenter un désavantage pour les zones plus pauvres, où la valeur des propriétés est plus basse.
- Des grilles d'imposition fixes peuvent faire en sorte que l'on manque des occasions de développement immobilier offrant des gains très importants, et ils imposent des exigences déraisonnables à l'égard des projets de développement de plus petite taille.
- Elles représentent un moyen utile de CPVF dans le cadre de projets de développement existants ou de nouveaux projets situés autour de systèmes de transport existants ou financés.
- Elles ont été utilisées avec succès pour financer des systèmes de transport collectif.

Une combinaison de méthodes

Bien entendu, il est possible de combiner les méthodes et, de fait, il est souvent souhaitable de le faire. Par exemple, il serait tout à fait possible et approprié d'adopter une méthode de CPVF basée sur les contributions volontaires des promoteurs tout en ayant recours à un prélèvement, à des frais d'impact ou à des frais d'aménagement en même temps. Cependant, il faut tenir compte d'un principe clé selon lequel le financement par CPVF découlant de la hausse de la valeur générée par le transport collectif ne peut être capté qu'une seule fois. Il doit être clairement établi que n'importe quels autres frais, prélèvements ou taxes sont associés à d'autres avantages ou visent le financement de routes, de parcs ou de services locaux, etc. Le réseau Crossrail de Londres en est un excellent exemple : on y retrouve des versements volontaires directs ainsi que des taxes ou frais axés sur la zone (prélèvement communautaire pour les infrastructures) qui contribuent au financement du projet. Le milieu des affaires s'est montré largement favorable à ces taxes axées sur la zone, car la ligne renforcera la place de Londres en tant que centre d'affaires.

Il existe aussi d'autres méthodes ayant été utilisées avec succès et qui peuvent s'inscrire dans l'une ou l'autre des catégories décrites ci-dessus. Par exemple, la vente de droits liés à la densité employée dans certains pays sud-américains, la vente de droits relatifs à la propriété du dessus dans le cas de stations ou les contrats de cession-bail. De nombreuses variantes de CPVF peuvent être évaluées une fois que l'on décide d'appliquer ces méthodes.

Dans le contexte canadien, il est intéressant de noter que, dans le cadre de la stratégie d'investissement Metrolinx, on recommande de combiner des méthodes de manière à optimiser l'utilisation des actifs en adoptant une approche fondée sur le développement immobilier et en imposant des frais d'aménagement par l'entremise des municipalités locales.

Que doit-il arriver dans la région de Montréal pour que la CPVF fonctionne ?

Pour que des méthodes de CPVF puissent être adoptées à Montréal, des mesures clés doivent être prises :

- Convenir des objectifs des intervenants clés.
- Comprendre la valeur et la capter pour tous les partenaires.
- Élaborer de nouveaux modèles de gouvernance et d'affaires.
- Protéger les fonds captés.
- Assurer l'indépendance de la planification.
- Garantir la confidentialité.

Ces éléments sont expliqués en détail ci-dessous.

Convenir des objectifs des intervenants clés

Il existe habituellement des divergences entre les différents ensembles d'objectifs. Par exemple, il peut y avoir un conflit entre l'optimisation de la CPVF et le nombre optimal de stations dans le but de maximaliser l'efficacité opérationnelle, ou bien entre les objectifs municipaux d'ordre éducatif, social ou environnemental et la maximalisation du TOD autour des stations. C'est pourquoi une collaboration efficace de tous les intervenants clés du secteur public est essentielle afin de convenir d'un ensemble d'objectifs et de priorités à l'égard de n'importe quel projet de CPVF. Cette coopération peut prendre plusieurs formes (collaboration volontaire, entité ad hoc, réglementation) et la forme du partenariat doit faire l'objet de discussions et d'analyses supplémentaires avec les intervenants clés.

Comprendre la valeur et la capter pour tous les partenaires

Afin de capter la plus-value liée au terrain et au développement découlant du nouvel achalandage, les partenaires doivent être bien conscients d'où se trouve la valeur, des sommes dont il s'agit et des personnes qui en profitent. Ils doivent également comprendre en quoi consiste la valeur pour chaque intervenant clé (municipalité, gouvernement régional, entreprises privées et consommateurs) et la façon de la capter. Un manque de collaboration entraîne une production de richesse moindre. Dans le contexte actuel de hausse de la demande et de diminution des ressources, les richesses produites doivent être partagées équitablement pour faire en sorte que toutes les parties en bénéficient de manière réciproque. La participation municipale aux efforts de CPVF peut permettre de débloquer des fonds et d'en tirer parti à l'échelle locale afin de réaliser des progrès à l'égard des priorités du domaine du transport, en plus d'établir un précédent quant à l'utilisation de nouveaux mécanismes de la part de gouvernements locaux sur le plan de la contribution financière à des projets de transport.

Élaborer de nouveaux modèles de gouvernance et d'affaires

Atteindre les objectifs convenus, déterminer la valeur et la distribuer équitablement exigent l'utilisation de modèles efficaces de gouvernance et d'affaires – cet élément joue toujours un rôle clé. Ainsi, de nouveaux modèles doivent être élaborés pour atteindre les objectifs en matière de CPVF, ce qui exige l'intervention de nombreux partenaires, dont les organismes publics chargés du transport, les services pertinents à l'échelle municipale, régionale et provinciale, ainsi que les différentes entreprises et agences du secteur privé.

Cet effort exige une mobilisation à deux niveaux : d'abord sur le plan stratégique, afin de conclure une entente générale d'application des méthodes de CPVF et, ensuite, sur le plan de l'application elle-même, car c'est à cette étape-ci que la valeur est captée. La ratification des mesures stratégiques est très utile, mais la deuxième étape, celle de l'exécution, est la plus importante.

Le principal avantage pour les promoteurs est que l'argent versé dans le cadre du processus de CPVF est réellement destiné au but poursuivi. En effet, souvent, ils désirent collaborer à l'atteinte d'objectifs convenus, mais ils sont moins enthousiastes à l'idée de participer à la gouvernance du secteur public, compte tenu de sa complexité. Des exemples de réussite peuvent contribuer à montrer que cette complexité peut être gérée et que cela vaut la peine de la surmonter.

Protéger les fonds captés

Un autre aspect clé de n'importe quel projet de CPVF consiste à s'assurer que les fonds amassés sont bel et bien destinés à des projets de transport précis. Les méthodes fondées sur le développement offrent un avantage en cette matière, car d'habitude, tout financement par CPVF peut être directement associé au projet qui génère le financement accru. Ainsi, il est facile de montrer, par exemple, au moyen d'un fonds en fiducie protégé, que tous les fonds amassés dans le cadre d'un projet donné seront utilisés relativement à ce projet.

Assurer l'indépendance de la planification

Il est très important que l'indépendance de la planification soit assurée en tout temps. C'est pourquoi les détails relatifs aux contributions volontaires doivent demeurer confidentiels, de manière à ce qu'aucun agent de planification ne fasse l'objet de pressions indues. Toutefois, les municipalités ont le droit de savoir que la CPVF fait partie du projet et d'aborder les aspects généraux des activités d'aménagement et d'intensification prévues autour des stations. Les fiduciaires ont également le droit de vérifier l'ampleur des ententes de CPVF associées au fonds et de s'informer de la probabilité qu'elles soient acceptées en ce qui concerne l'obtention de permis de planification. L'une des fonctions des fiduciaires consiste à vérifier si un nombre suffisant de paiements de CPVF ont été reçus et si les conditions ont été respectées, car les ententes de CPVF peuvent varier. Cependant, il faut faire attention pour éviter d'exercer une influence indue sur le processus de planification compte tenu du potentiel lié aux paiements de CPVF importants.

L'une des principales caractéristiques du Grand Montréal est la qualité de la planification urbaine par l'entremise du plan métropolitain d'aménagement et de développement (PMAD) de la Communauté métropolitaine de Montréal (CMM). L'aménagement relève de la CMM, et elle a tenu des consultations publiques dans les cinq régions qui la composent : l'agglomération de Montréal, l'agglomération de Longueuil, la Ville de Laval, la couronne Nord et la couronne Sud.

Les objectifs du PMAD sont clairs :

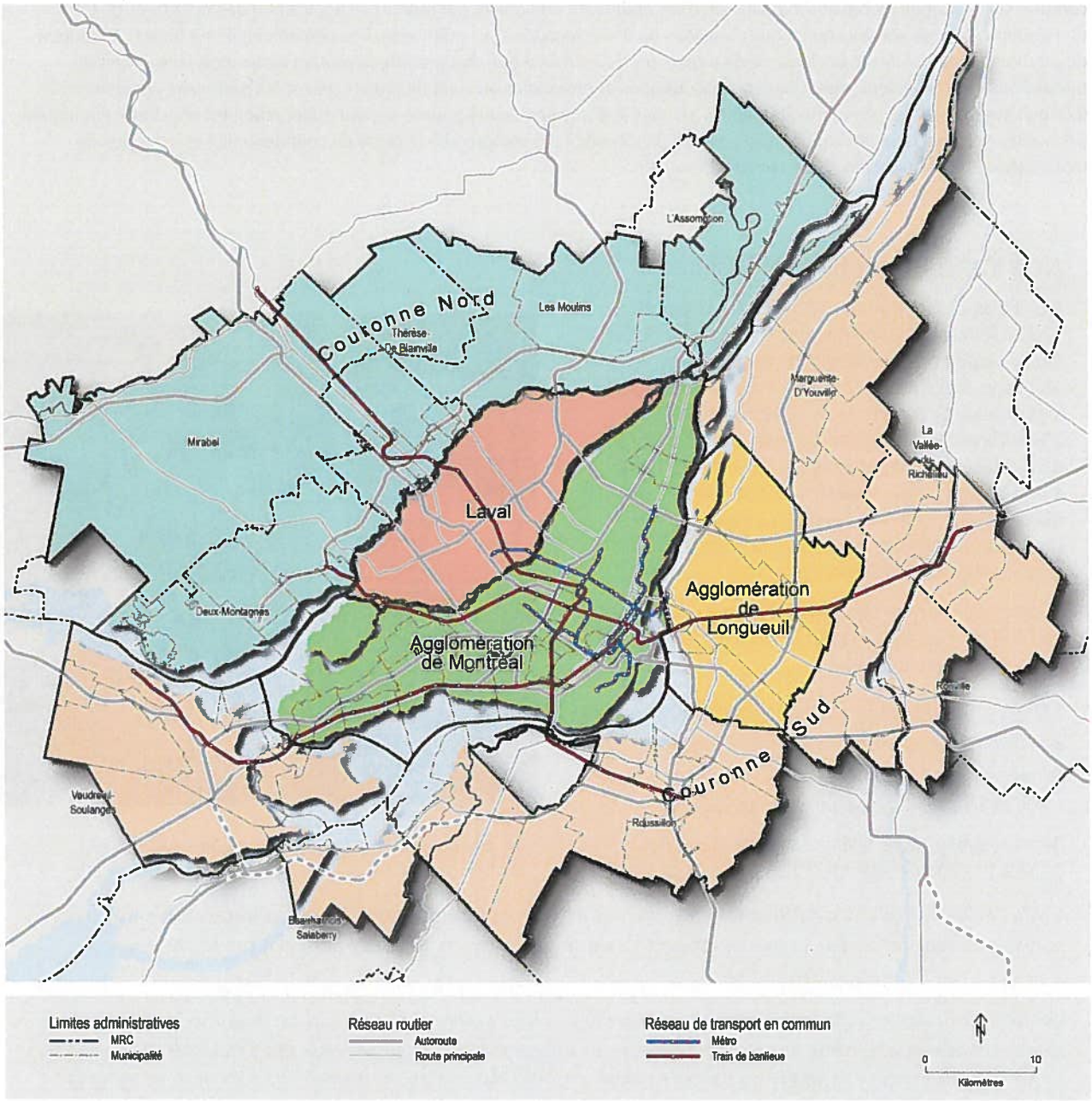
- **En matière d'aménagement,** le PMAD établit l'orientation que le Grand Montréal ait des milieux de vie durables. Pour ce faire, le PMAD propose d'orienter au moins 40 % de l'urbanisation projetée dans un rayon d'un kilomètre autour des stations, actuelles et projetées, de métro, de trains de banlieue, de SLR et de services rapides par autobus afin de développer des quartiers de type TOD. Par ailleurs, une densification du cadre bâti est favorisée sur les terrains vacants ou à redévelopper situés à l'extérieur des aires TOD.

D'autres objectifs visent la délimitation du périmètre métropolitain, la localisation des installations métropolitaines actuelles et projetées, l'occupation optimale du territoire agricole et les contraintes géomorphologiques et anthropiques du territoire.

- **En matière de transport,** le PMAD établit l'orientation que le Grand Montréal ait des réseaux et des équipements de transport performants et structurants. Pour ce faire, le PMAD propose de développer le réseau de transport collectif métropolitain afin de hausser la part modale du transport collectif, actuellement de 25 %, à 30 % de l'achalandage en période de pointe du matin d'ici 2021 et à 35 % d'ici 2031. Le développement de ce réseau, qui nécessite au moins 23 milliards de dollars d'investissements, est essentiel pour augmenter la mobilité durable et favoriser la réduction des émissions de gaz à effet de serre dont une grande partie est émise par les véhicules routiers.

Le PMAD propose également le parachèvement de certains tronçons du réseau routier afin d'assurer, plus particulièrement, la mobilité des marchandises et la desserte des principaux pôles d'emplois métropolitains. Il propose également de définir un réseau artériel métropolitain ainsi qu'un réseau de vélo métropolitain qui permettra d'augmenter le transport actif. (réf. 22).

Nous sommes d'avis que les objectifs clairs de la CMM, comme la localisation de zones TOD, garantiront l'indépendance de la planification et faciliteront l'application de la CPVF, car les intervenants du secteur privé connaîtront les règles et s'ajusteront en conséquence.



PMAD

Garantir la confidentialité

Cette question s'avère plus complexe dans le cas des méthodes fondées sur le développement immobilier, car des discussions ont lieu avec différents promoteurs et propriétaires fonciers. Dans le cadre de propositions de développement, il existe toujours une opposition entre, d'une part, l'examen du public et l'accès à l'information et, d'autre part, le respect de la confidentialité. La question ne pose pas vraiment de problème dans le cas des méthodes fondées sur la fiscalité. En ce qui concerne le soutien du secteur privé à l'égard de n'importe quel projet de CPVF, il importe de l'obtenir à deux niveaux. Premièrement, il s'agit de compter sur le soutien global de l'industrie du développement immobilier par rapport à l'application des méthodes de CPVF, et d'obtenir ainsi des conseils quant aux occasions où il faut recourir à ces méthodes. Deuxièmement, il faut obtenir le soutien de promoteurs particuliers dans le cadre de projets précis. La forme que doit prendre le soutien global doit faire l'objet de discussions avec le secteur privé; quant aux discussions approfondies au sujet de projets précis, les partenaires doivent veiller à ce qu'elles demeurent confidentielles. Il ne s'agit pas là d'une nouveauté pour le secteur public, car il est constamment appelé à travailler avec des rapports confidentiels, mais il importe de bien comprendre le cadre de confidentialité et les règles de mobilisation s'appliquant aux deux niveaux de soutien.

New York : Grand Central Terminal

Projet d'aménagement de 210 millions $ de Grand Central Terminal. Le promoteur du secteur privé, SL Green Realty Corp., a proposé la construction d'une tour de 65 étages à côté du terminal, et il a récemment dévoilé la réalisation de travaux de rénovation de plus de 200 millions $ pour faciliter la circulation des usagers dans cette importante station. SLG Green Realty Corp. a laissé savoir qu'elle réaliserait les travaux d'aménagement de Grand Central Terminal si la ville l'autorisait à construire 1,6 million de pieds carrés de locaux à bureaux dans l'enceinte.

Le processus de répartition du risque entre les secteurs public et privé est clair, d'après le commentaire d'un représentant du promoteur :

« Nous sommes responsables des dépassements de coûts et de la supervision des travaux de construction. »

– Robert Schiffer, directeur principal de SL Green

Représentation de 1, Vanderbilt (à gauche) et de Grand Central (à droite). Source : Kohn Pedersen Fox Associates.

Dans un communiqué, la maire adjointe Alicia Glen a décrit la position de l'administration à l'égard du projet :

« Nous croyons qu'une planification intelligente ne vise pas uniquement les immeubles, mais aussi les investissements d'infrastructure et les services dont nous avons besoin pour appuyer la croissance.

Notre vision pour east midtown met le transport au premier plan et les changements associés au couloir Vanderbilt illustrent cette approche. Avant que le premier employé de bureau ne traverse les portes de ce nouvel immeuble, nous aurons amélioré les quais du métro, les salles des pas perdus et les entrées, ce qui augmentera la capacité de Grand Central et simplifiera la vie de milliers de navetteurs. Voilà le genre de croissance intelligente que nous voulons mettre en place dans la ville. » (réf. 25)

Quels sont les défis associés à la mise en œuvre de la CPVF ?

La mise en œuvre des mécanismes de CPVF à Montréal pose les défis suivants :

- Acceptation du principe de CPVF et de ses avantages.
- Volonté de changer et d'agir.
- Collaboration entre les intervenants des secteurs public et privé.
- Modification possible de la politique et de la stratégie.
- Modification possible du cadre juridique.
- Modification possible des méthodes d'évaluation.

Ces défis sont expliqués en détail ci-après.

Acceptation du principe de CPVF et de ses avantages

Il importe que tous les intervenants clés reconnaissent que la CPVF est un outil utile pouvant contribuer au financement futur et à la réussite à long terme de l'infrastructure de transport collectif. Il faut également que soit admis le principe voulant que la CPVF ne soit pas une réponse universelle à tous les besoins en matière de transport collectif. Ce mécanisme est important et représente un apport potentiel de capitaux élevés, mais il n'est pas efficace dans tous les projets. Dans certains cas, il n'y a pas de hausse de la valeur foncière, les gains fonciers qui peuvent raisonnablement être récupérés sont minimes, ou encore la hausse de la valeur foncière est difficilement récupérable. Aussi est-il important de comprendre dans quelles circonstances ce mécanisme peut être utilisé avec le plus de profit. Cela ne signifie pas pour autant qu'un projet qui ne peut générer un financement par CPVF ne devrait pas être exécuté, mais simplement que les mécanismes de CPVF ne sont pas appropriés dans ce cas.

Volonté de changer et d'agir

Il est fréquent que le recours aux mécanismes de CPVF nécessite la remise en question de certains points de vue traditionnels et la volonté de franchir des frontières non traditionnelles avec des partenaires dont les valeurs et les objectifs peuvent être différents. Les avantages potentiels de ces mécanismes pour le Grand Montréal, la population et les entreprises de la région devraient cependant les rendre attrayants et les faire accepter. La volonté de transformer les besoins doit s'accompagner d'une volonté d'agir. Cela exige que des modèles de réalisation soient mis au point de concert avec les intervenants clés.

Collaboration entre les intervenants clés des secteurs public et privé

La concertation est essentielle au succès des mécanismes de CPVF et les autorités publiques devront établir de solides relations de travail avec le secteur privé. La collaboration doit se situer à deux niveaux : des forums d'échange stratégiques et l'établissement de modalités de travail associées à des projets et des lieux d'implantation précis. Cette démarche exigera du temps et des efforts, mais elle rapportera des dividendes. Il importe de reconnaître les besoins mutuels et de comprendre les valeurs et les objectifs même s'ils diffèrent. Les secteurs tant public que privé doivent admettre la nécessité de faire équipe pour mener à bien les projets de CPVF dans l'intérêt des citoyens et des entreprises de la région de Montréal.

Le secteur public doit collaborer avec le marché et comprendre ses forces et ses contraintes. De plus, les services d'urbanisme municipaux doivent être disposés à autoriser et à appuyer – et de préférence à maximiser – le développement à proximité des stations. La création d'une masse critique aux abords des stations est essentielle pour assurer l'existence de centres à vocation mixte dynamiques. Cette condition sous-tend l'ensemble du processus et garantit des retombées en matière de qualité de vie durable et de financement par CPVF.

Le secteur privé doit comprendre les aspects touchant la législation, les approvisionnements et le bien public qui sont du ressort du secteur public. En d'autres termes, les intervenants clés doivent collaborer de manière à stimuler la création d'une valeur et la récupération ultérieure des gains fonciers pour tous.

Le succès de cette collaboration dépendra de trois éléments :

- l'instauration d'un climat de confiance et de compréhension mutuelle;
- la détermination des objectifs communs et des avantages à partager;
- le choix du mode de réalisation. Le principe de CPVF est généralement acceptable pour le secteur privé. L'enjeu fondamental consiste à trouver un mode de réalisation qui assure la stabilité, l'égalité des chances et l'équité. La méthode retenue doit permettre la récupération et un partage équitable des gains fonciers tout en sauvegardant l'indépendance du système de planification, en respectant les règles et les règlements du secteur public et en assurant l'égalité des chances et la confidentialité des partenaires du secteur privé. Comme l'égalité des chances est importante, le recours au mode de réalisation devrait être uniforme. Cela ne signifie pas que la hausse de la valeur foncière sera évaluée et captée de la même manière dans toutes les situations, mais que les principes et le mode de réalisation de la CPVF seront relativement uniformes. Toutefois, comme chaque site et chaque possibilité de développement sont uniques, il est très difficile de prouver que le taux d'uniformité est de 100 %.

L'appui des hauts fonctionnaires est très utile. Par exemple, le gouvernement fédéral ou le gouvernement provincial pourrait exiger que les sources de financement comprennent, dans la mesure du possible, la CPVF dans tous les projets proposés, les ententes ou les autorisations. Il pourrait également être signalé que le financement public du transport collectif est lié à l'appui que démontrent les autorités municipales en adoptant des politiques de planification de TOD qui soient progressistes.

De nouveaux modèles d'affaires devront être établis pour que les mécanismes de CPVF retenus puissent être exécutés. La forme qu'ils prendront dépendra du mécanisme de CPVF ainsi que des points de vue et des objectifs des partenaires. Ces modèles devront tenir compte du fait que la confidentialité est un impératif et sauvegarder l'indépendance du processus d'aménagement du territoire.

Modification possible de la politique et de la stratégie

L'exemple de Toronto illustre bien l'impact de la mise en œuvre de la CPVF sur la politique et la stratégie. La CPVF a été mise à contribution dans la Stratégie d'investissement de Metrolinx, adoptée le 27 mai 2013 comme outil d'investissement potentiellement important dans le transport collectif. L'estimation effectuée par la Stratégie d'investissement du potentiel qu'offrait la CPVF de générer, à l'aide du processus existant, un flux de revenus anticipés et réservés au projet, est très prudente, et des résultats nettement supérieurs pourraient être obtenus si la CPVF était résolument mise à profit par le gouvernement et les partenaires gouvernementaux, en collaboration avec le secteur privé.

La planification du recours à la CPVF est un excellent test qui confirmera si les promoteurs immobiliers reconnaissent la valeur que représente le transport collectif, et elle est, de ce fait, un bon outil d'évaluation du risque lié à la question de savoir si le développement additionnel attribué à l'accessibilité accrue du transport crée une intensification de la demande et, par conséquent, un accroissement de la CPVF.

Modification possible du cadre juridique

L'utilisation des mécanismes de CPVF soulèvera des questions de droit, mais rien dans le cadre juridique québécois ou canadien n'interdit le recours à la CPVF. Les procédures détaillées qui régiront l'utilisation de la CPVF devront cependant être adaptées.

La CPVF peut être un outil d'optimisation des politiques et des actifs. Les autorités locales détiennent peut-être des actifs importants et pourraient examiner comment les maximiser en faveur de la région de Montréal. Les travaux à cet égard consisteraient pour l'essentiel à déterminer comment créer une intensification de la demande et tirer des revenus additionnels des biens immobiliers publics et des terrains adjacents aux axes de transport appartenant au public et aux actifs des stations. Cet examen pourrait comporter une étude des politiques en matière d'aménagement et des politiques immobilières actuelles visant à assurer qu'elles ne restreignent pas le recours aux mécanismes de CPVF. Elles devraient même être favorables à leur adoption.

Modification possible des méthodes d'évaluation

On mesure traditionnellement l'accessibilité en fonction des minutes et des secondes gagnées par les personnes qui se déplacent – en voiture aussi bien qu'en empruntant les transports collectifs – et des avantages connexes qui peuvent être attribués à la réduction du temps de déplacement en raison de la mise en œuvre d'un projet de transport collectif. Les organismes de transport utilisent cette méthode dans leurs analyses coûts-avantages et d'autres analyses de la planification et des investissements. Le recours aux mécanismes de CPVF exigera que ces méthodes d'évaluation soient étoffées par des analyses de la CPVF. Par exemple, la CPVF nécessitera une approche plus traditionnelle faisant appel à des analyses du secteur immobilier, à des mesures financières et aux rendements, plutôt qu'une méthode d'évaluation fondée essentiellement sur les gains de temps attribuables au transport collectif. À l'heure actuelle, l'analyse coûts-avantages est un moyen efficace d'évaluer des projets de transport, mais la prise en considération de la CPVF pourrait entraîner une double comptabilisation ou mettre en lumière la sous-évaluation de certains systèmes de transport collectif qui créent une valeur substantielle par le recours à la CPVF. Les méthodes traditionnelles d'évaluation du transport collectif ne tiennent fréquemment pas compte de la hausse de la valeur foncière (ni des scénarios de récupération potentielle) parce que l'aménagement du territoire et ce qu'implique la manière de le modifier ou de le réserver peuvent influer sur la façon dont on devrait évaluer les investissements dans le transport. Les projections de croissance régionale amènent fréquemment les urbanistes à analyser les investissements en fonction des projections de croissance prescrites d'une région urbaine. Or, si l'on peut démontrer que l'augmentation de la densité sur les terrains des stations ou dans la zone avoisinante peut influer sur l'achalandage et les retombées financières en raison des changements liés à la politique d'aménagement du territoire, cela aura une incidence sur la décision d'investir, ou de ne pas investir, dans le transport collectif (et la somme des efforts à déployer pour assurer l'accroissement de la densité). Le seul moyen d'en tenir compte est de faire ressortir les interrelations directes qui existent entre l'immobilier et les décisions d'investir dans le transport collectif. Il est avantageux d'évaluer la CPVF parce que cela démontre clairement qu'elle génère une « valeur réelle » qui peut être utilisée pour assurer une meilleure accessibilité et, par conséquent, une compétitivité accrue; ces atouts devraient, à leur tour, soutenir la performance financière du réseau de transport et générer d'autres avantages qui peuvent être quantifiés par diverses méthodes d'évaluation déjà utilisées.

Étapes à venir

Ce document de discussion a exposé en quoi consiste la CPVF et a fait ressortir ses avantages potentiels pour le Grand Montréal. Il a également fait état des défis qui se poseront et des moyens d'action qui devront être mis en œuvre si des mécanismes de CPVF sont utilisés pour contribuer à offrir un transport d'excellente qualité à la population et aux entreprises de l'ensemble de la région. Si les autorités publiques optent pour des mécanismes de CPVF, un plan d'implantation devra être dressé. Ce plan comporterait deux volets, soit des mesures à court terme et des mesures à long terme. Les autorités publiques doivent clarifier les responsabilités au sein de la structure du personnel et des équipes en place pour exécuter ces mesures à court et à long terme. Les mesures à court et à long terme proposées sont décrites en détail ci-dessous.

Mesures à court terme

MESURE 1 Les autorités devraient s'engager publiquement à mettre en œuvre la CPVF dans le Grand Montréal

Les données recueillies dans le monde entier révèlent hors de tout doute qu'une accessibilité accrue se traduit par un apport de richesse substantiel à proximité des stations si les conditions du marché sont propices et si le service de transport est bien localisé et offre les destinations appropriées. De plus, le principe de la CPVF est généralement accepté par le secteur privé. Il est donc justifié que Montréal opte pour le recours à des mécanismes de CPVF dans les situations qui s'y prêtent.

Il serait opportun que les autorités publiques fassent une déclaration préliminaire pour exprimer leur intention d'inclure des mécanismes de CPVF dans leur boîte à outils financière. Une déclaration ferme à cet effet, qui indique leur volonté de collaborer avec le secteur privé, serait non seulement bienvenue, mais également indispensable.

MESURE 2 Les autorités publiques devraient encourager la collaboration entre les organismes publics et privés

Il serait opportun que les autorités publiques établissent des relations avec les intervenants clés des secteurs public et privé pour mobiliser l'adhésion à la CPVF dans la région de Montréal, aux niveaux tant stratégique que local. Au niveau stratégique, cela pourrait donner lieu à des forums d'échange public-privé. Il faudrait mener des discussions visant à désigner les représentants qui participeraient à ces forums d'échange. Les principaux avantages seraient d'amener les deux secteurs à accorder leur appui général au principe et à jeter les bases d'une collaboration au niveau de chaque projet. La concertation locale, au niveau de chaque projet impliquant les intervenants concernés des secteurs public et privé, est essentielle. Cette collaboration pourrait également être favorable à l'aménagement du transport collectif, car les organismes publics obtiendraient directement l'avis des promoteurs quant aux systèmes de transport qui, selon eux, sont créateurs de valeur et générateurs de CPVF. On pourrait envisager la mise sur pied de comités de développement de projets inspirés de ceux qui ont été créés dans le cadre de certains projets à Londres, tels que Canary Wharf, la gare électrifiée de Battersea et le prolongement de la ligne nord.

Pour que le processus de concertation puisse être amorcé, les autorités publiques devraient envisager d'inviter les intervenants clés à une table ronde pour discuter de la forme que pourraient prendre les forums d'échange public-privé et du mode de réalisation.

MESURE 3 Mettre en œuvre des projets pilotes prêts à être mis en chantier

Le meilleur moyen de démontrer le potentiel de la CPVF, c'est de passer à l'action. La mise en œuvre de la CPVF devrait donc commencer par des projets pilotes prêts à être mis en

chantier. Ceux-ci comporteraient la collecte de données, le contrôle de la performance et des évaluations des avantages de la CPVF pour qu'une base de données sur l'expérience locale soit constituée en vue des analyses de rentabilité à venir. Des plans des sites, des dessins et d'autres éléments d'information relatifs aux projets en question seraient obtenus. À plus long terme, les autorités publiques devront élaborer une méthodologie relative au choix des emplacements, en collaboration avec le secteur privé, pour que les travaux et l'échéancier des projets appropriés soient établis. Plus précisément, dans certains cas, les autorités publiques peuvent choisir les emplacements à proposer. Cependant, pour maximiser la création de la valeur tirée des projets possibles, le secteur privé devrait également suggérer des idées. En fait, certains de ces projets seront réalisés plus efficacement s'ils sont dirigés par le secteur privé.

À court terme, les autorités publiques devraient profiter des forums d'échange proposés à la mesure 2 pour retenir un ou deux projets pilotes prêts à être mis en chantier. Il serait bon que le mécanisme de CPVF choisi dans le cadre de ces projets consiste en une méthode facultative fondée sur le développement immobilier, car ce type de mécanisme ne nécessite pas l'adoption de nouvelles mesures législatives, est en phase avec le marché et peut être exécuté rapidement. Nos travaux préliminaires semblent indiquer que le projet de SLR dans l'axe de l'autoroute 10 (qui partira de Brossard, empruntera le futur pont appelé à remplacer le pont Champlain et achèvera son parcours à une station terminale située au centre-ville de Montréal) soit un candidat idéal. L'autre candidat serait le projet de SLR aéroportuaire qui relierait le centre-ville de Montréal à l'aéroport international Montréal-Trudeau, puis se dirigerait vers l'Ouest de l'île jusqu'à Pointe-Claire.

Mesures à long terme

MESURE 4 Mettre en œuvre une structure et des processus pour exécuter des mécanismes de CPVF à long terme

Les autorités publiques, en partenariat avec d'autres intervenants clés, devront en définitive constituer officiellement une équipe responsable de l'exécution à long terme, déterminer son rôle et sa structure et lui confier un mandat et des responsabilités clairs à l'égard de la mise au point des mécanismes de CPVF et de TOD à proximité des stations. Les membres de cette équipe devront posséder un éventail de compétences, y compris une expérience et des qualifications pertinentes dans la conclusion d'opérations immobilières et l'exécution d'activités d'aménagement. Une structure de type propriétaire-participant devra être établie ponctuellement dans le cadre de chaque opération. De plus, il faudra dresser un plan d'exploitation en regard des actifs et, peut-être, créer un type quelconque de comité ou de groupe responsable des investissements. Il convient de noter que les coûts de dotation en personnel associés à ces systèmes seront modestes par rapport à la valeur que représente un programme de CPVF efficace.

MESURE 5 Élaborer et établir des lignes directrices ainsi qu'un cadre relatif aux critères de sélection

Les autorités publiques devraient énoncer les principes d'aménagement qui régiraient tous les TOD et le développement d'un pôle économique.

Cette mesure nécessitera l'exercice d'une diligence raisonnable, des études de marché, des analyses démographiques et une collaboration avec les promoteurs et le secteur privé afin de recueillir des renseignements sur le marché. Puisque l'un des avantages du recours à la CPVF est qu'il permet d'attribuer une valeur pécuniaire au transport collectif, une grande importance devra être accordée aux retombées et aux analyses financières.

Ce processus devra comporter des lignes de conduite et des principes d'aménagement précis au niveau des projets. Cette mesure sera exécutée en partenariat avec les forums d'échange proposés à la mesure 2.

Il est important de préciser que la méthodologie de sélection n'empêche pas qu'un collaborateur du secteur privé propose un site qui se prête à la CPVF. Le secteur privé devrait même être encouragé à le faire. Il devrait revenir aux autorités publiques d'énoncer une série de critères clairs et transparents, à la fois équitables et réalistes, qui pourront être utilisés pour évaluer et, dans un premier temps, considérer des possibilités de CPVF.

Il serait bon que les autorités publiques établissent une méthodologie de sélection des sites qui comprenne des paramètres tels que le manque à gagner en matière de financement, l'opportunité – du point de vue de la valeur – d'offrir une meilleure accessibilité aux principaux sites, le potentiel de TOD à proximité des stations, un schéma d'aménagement favorable, l'attrait exercé sur le marché en matière d'aménagement, et la volonté de tous les intervenants clés d'appuyer le projet.

Les autorités publiques devraient établir un inventaire des zones adjacentes à un service de transport existant ou éventuel qui présentent un fort potentiel de développement.

Enfin, les autorités publiques devront consulter des spécialistes ou des observateurs du marché pour rétrécir le choix des sites à prendre en considération et devront solliciter la participation de la collectivité et des promoteurs. Une fois que les mesures décrites précédemment auront été prises, il sera possible de déterminer les étapes et l'échéancier des projets de CPVF, sous réserve qu'il y ait : a) une valeur à exploiter; b) des partenaires consentants avec lesquels créer cette valeur.

MESURE 6 Élaborer un cadre de travail avec les principaux organismes des secteurs public et privé

Les autorités publiques devraient établir un cadre de travail avec les municipalités ou les grandes villes et leurs services d'urbanisme respectifs pour que les terrains situés à proximité des stations puissent être convertis en centres à vocation mixte et de densité élevée ou pour que les zones ou les axes des stations puissent, dans la mesure du possible, devenir des pôles de croissance urbaine.

De plus, elles devraient créer un cadre de travail en collaboration avec les promoteurs pour tirer parti au maximum de la CPVF afin de financer le transport collectif tout en assurant un rendement juste et équitable au secteur privé.

Ces deux mesures feront appel au partenariat et à la collaboration instaurés au moyen des forums d'échange proposés à la mesure 2. Les autorités publiques devraient également mettre à profit les mécanismes qui se prêtent à la participation de multiples intervenants et les conférences pour faire participer le marché et la population.

MESURE 7 Établir des modèles de gouvernance et des modèles d'affaires pour exécuter les projets de CPVF

Conséquence inévitable de la décision de mettre en œuvre la CPVF, cette mesure exigera du temps et des entretiens avec les principaux partenaires. Les études de cas menées partout dans le monde seront utiles, mais elles devront être adaptées au contexte montréalais. Cette mesure doit être prise en collaboration avec les intervenants clés des secteurs public et privé.

Pour tirer parti des projets pilotes initiaux, il deviendra nécessaire d'officialiser et d'optimiser les initiatives qui présideront à la création et à la mise à profit de mécanismes de CPVF.

MESURE 8 Définir les étapes à suivre et l'échéancier à respecter pour assurer à long terme l'exécution des projets de CPVF dans le Grand Montréal

Les mesures proposées permettront l'exécution de ces projets. Chacun d'eux sera différent et pourra comporter le recours à différents mécanismes de CPVF. Une analyse détaillée, effectuée projet par projet, présidera à leur choix. Les autorités publiques continueront de gagner la confiance requise pour mener à bien leur collaboration avec les partenaires des secteurs tant privé que public en mettant au point un mode d'exécution de la CPVF complexe, responsable et transparent et un programme d'évaluation qui respecte la confidentialité commerciale. On veillera à préciser que la démarche et l'échéancier seront suffisamment souples pour qu'il soit possible de les évaluer et, s'il y a lieu, d'inclure les nouvelles idées et propositions des partenaires des secteurs public et privé.

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Annexe – Exemples de méthodes de CPVF

Exemples de méthodes de CPVF fondées sur le développement immobilier

Mass Transit Railway Corporation (MTR), Hong Kong

La MTR est une société publique détenue en majorité par le gouvernement de Hong Kong. Le gouvernement confère à la MTR des droits exclusifs sur les baux fonciers d'une durée de 50 à 70 ans contrôlés par l'État et des droits d'aménagement connexes au-dessus des stations et sur les terrains adjacents. La MTR subdivise les grandes parcelles louées par l'État en petites parcelles qui sont offertes aux promoteurs privés dans le cadre d'une procédure d'appel d'offres concurrentielle. Les prix reflètent l'accroissement de la valeur foncière attribuable à la proximité de la station. Hong Kong est l'un des rares endroits dans le monde où un organisme de transport réalise des bénéfices. Ceux-ci résultent en grande partie du succès du développement immobilier qui découle de l'accessibilité rendue possible par le transport collectif.

Tokyo (Japon)

Les sociétés ferroviaires de Tokyo utilisent des modèles de captation de la valeur foncière pour financer le transport et dégager des bénéfices. Leur approche est différente de celle de Hong Kong parce que les sociétés nippones ne se contentent pas de construire des bâtiments : elles érigent de nouvelles villes sur des terrains en friche. En raison du ralentissement économique, elles ont créé de nouvelles sources de revenus et de nouvelles approches telles que des partenariats stratégiques et le développement intercalaire stratégique, par exemple l'aménagement de centres commerciaux urbains au-dessus des stations terminales des systèmes sur rail urbains et à l'intérieur de celles-ci. La Japanese Railway Construction Public Corporation prend part à des projets ferroviaires qui, en plus d'assurer des services de transport, améliorent le milieu urbain. Cette société utilise également un programme de réajustement foncier qui consiste à réserver des terrains pour le chemin de fer en substituant des terrains acquis au préalable par les municipalités dans une zone d'aménagement intégré.

Oerstadt (Copenhague)

Ce projet était une cœntreprise de l'État danois et de la Ville de Copenhague. L'État avait fait don de 310 hectares de terrain entre la ville et l'aéroport et le pont Öresund qui relie le Danemark à la Suède. L'idée était de financer un système de transport rapide sur rail à destination de l'aéroport et du pont en récupérant les gains fonciers attribuables à l'accessibilité plus grande du transport rapide. La valeur récupérée devait couvrir les immobilisations. De plus, l'imposition de taxes foncières avait été prévue pour créer un flux de revenus destinés à financer les coûts d'exploitation ou de rembourser les prêts nécessaires à la construction. Une nouvelle société d'aménagement avait été créée pour exécuter le projet. Malheureusement, la mise en service du transport rapide a été retardée de trois ans et a occasionné un dépassement de budget de 800 millions €. Cette situation a été attribuée à un mauvais synchronisme avec l'économie et à une demande nulle dans le domaine de l'aménagement. Le développement urbain amené par le transport rapide est une réussite pour de nombreux motifs, mais on peut aussi tirer des leçons de cette étude de cas en ce qui concerne les risques associés à l'aménagement et à la construction d'un réseau de transport.

Canary Wharf, Londres

Dans le quartier des docks à Londres, le secteur privé et les instances qui font la promotion des entreprises sans but lucratif ont collaboré avec le secteur public pour susciter un débat, des tensions et une concertation qui ont permis la production d'analyses de rentabilité rigoureuses, la reddition de comptes et l'exécution de projets de transport réussis à Londres. Dans certains cas, les projets et les plans de transport ont été ajustés en fonction de l'expérience et du savoir-faire du secteur privé; une importante valeur publique et privée a ainsi été créée. Par exemple, Canary Wharf Group, la société d'aménagement et de gestion responsable de Canary Wharf Estate, fait participer et finance directement des experts-conseils pour effectuer des recherches, planifier et défendre trois générations de services de transport rapide, soit le système léger sur rail du quartier des docks, le prolongement de la ligne Jubilee et Crossrail. Canary Wharf Group a contribué aux projets de transport rapide en accordant son concours financier et en assumant certains

risques. Ce groupe collabore avec London First, une coalition de gens d'affaires qui œuvre dans les domaines des orientations stratégiques, de l'aménagement et de la défense des droits et s'est donné pour mission de faire de Londres le meilleur endroit où faire des affaires dans le monde. Cette initiative visait à donner plus de poids aux analyses de rentabilité, avec l'appui du secteur privé, et a abouti à l'imposition de nouvelles taxes sur l'aménagement et à la participation des entreprises au financement du transport collectif.

Canary Wharf sera l'une des plus importantes stations de Crossrail. Tout comme la station Canary Wharf Tube, qui se trouve non loin de là, la nouvelle station de Crossrail sera construite dans le quartier des docks. La station et l'aménagement prévu des aires de vente au détail et de parcs dont l'aménagement est prévu occuperont six étages.

En contrepartie de l'accès à cette nouvelle station qui reliera en 39 minutes le quartier des affaires de Canary Wharf à l'aéroport Heathrow, le promoteur du secteur privé a accepté de verser une contribution de 150 millions £, soit environ 33 % des coûts de construction totaux. Le périmètre de la station a été conçu et construit pour le compte de Crossrail par Canary Wharf Contractors Limited, une filiale à part entière de Canary Wharf Group plc. Les travaux sont exécutés à un prix fixe de 500 millions £, dont une partie sera assumée par CWG.

Edinburgh Rail Ltd

Le mécanisme de CPVF utilisé par Edinburgh Rail repose sur un partenariat volontaire avec les promoteurs et les propriétaires fonciers. La société négocie des accords de contribution avec les promoteurs à proximité des stations projetées. Ces accords reposent sur un partage des gains fonciers entre le promoteur et le transporteur. Les fonds générés par ce mécanisme sont déposés dans un fonds en fiducie protégé qui est strictement réservé au projet de transport. Ce mécanisme suit la granularité du marché et répartit équitablement la richesse créée par l'accessibilité plus grande du transport collectif. Il n'est efficace que s'il y a un potentiel d'aménagement, si la ligne de transport donne accès à des secteurs où les usagers souhaitent se rendre et si le secteur privé a la certitude que le financement public est insuffisant, à lui seul, pour assurer le service de transport.

Exemples de méthodes CPVF fondées sur la fiscalité

Translink, Vancouver

Translink a créé une division de l'immobilier en mars 2008 et projette aujourd'hui la mise en valeur de biens immobiliers pour générer des fonds destinés à financer le transport collectif. Selon ce plan, Translink achètera des terrains en bordure des nouveaux tracés et à proximité des stations, et fera croître leur valeur en intensifiant le zonage des terrains et en nouant des partenariats avec des promoteurs pour créer des lotissements commerciaux et résidentiels de forte densité. Les estimations du flux de revenus ont avoisiné 30 millions $ par année pendant cinq ans. Il est intéressant de noter qu'après la mise en service du Sky Train en 1985, les promoteurs se sont arrachés les terrains à proximité des stations. Au total, 7 870 maisons ont été construites dans un rayon de 500 m des stations entre 1986 et 1996. De plus, des tours commerciales sont apparues aux abords des stations. La hausse de la valeur foncière n'a pas été réalisée immédiatement, mais Translink projette maintenant l'aménagement de quatre villages autour des stations pour stimuler la croissance des pôles existants par la création d'agglomérations compactes et attrayantes qui auront une vocation polyvalente et seront centrées sur les stations.

Washington Metropolitan Area Transit Authority (WMATA)

Le programme d'aménagement conjoint de WMATA a vu le jour dans les années 1970 et doit sa notoriété à son expertise interne dans le domaine immobilier, à la rentabilité de ses activités et aux structures innovatrices des opérations conclues. Ce programme est administré au moyen de biens immobiliers appartenant à WMATA ou contrôlés par cet organisme, dont la commercialisation est confiée à des promoteurs commerciaux et résidentiels en vue d'assurer la mise en valeur des projets d'aménagement axés sur le transport collectif. Jusqu'au milieu des années 2000, WMATA a acheté proactivement des terrains adjacents aux stations en vue de projets d'aménagement conjoint. Les revenus bruts annuels moyens tirés de ces activités ont été supérieurs à 6 millions $. En 2008, WMATA a adopté des politiques d'aménagement conjoint révisées qui ont amélioré la réceptivité aux possibilités d'aménagement et aux conditions du marché, encourageant une coopération accrue entre les urbanistes locaux et accordant la priorité aux avantages à long terme de TOD.

Prolongement du MAX, Portland (Oregon)

En 1999, une proposition d'aménagement conjoint a été mise de l'avant pour financer le prolongement vers l'aéroport de Portland, au coût de 125 millions $, du système léger sur rail MAX. Ont pris part à ce projet le Port de Portland, la Ville de Portland, la Commission d'aménagement de Portland, l'agence de transport Tri-Met (pour Tri-County Metropolitan Transportation District of Oregon) et une société d'aménagement privée, Cascade Station Development Company. Les investisseurs privés ont convenu d'assumer la responsabilité du remboursement de 28,2 millions $ d'obligations et, en contrepartie, ont obtenu un bail emphytéotique d'une durée de 85 ans sur un terrain d'une superficie de 120 acres occupé par deux des quatre stations projetées. Le reste du financement a été assuré par le Port de Portland (28,3 millions $), le fonds général de Tri-Met (45,5 millions $) et la Ville de Portland (23,0 millions $ tirés d'un fonds de revitalisation urbaine et de la perception de nouvelles taxes). Depuis 2005, les abords de la station Cascade ont connu une croissance importante.

Taxe à la valorisation, Colombie

En Colombie, les travaux publics sont financés par la perception d'une taxe à la valorisation. Il s'agit d'une taxe immédiate qui correspond théoriquement à la hausse de la valeur foncière résultant des investissements publics directs. Cette taxe repose sur une évaluation des propriétés avant et après les travaux, et son taux est calculé à l'aide de « cœfficients d'avantages » selon les catégories d'aménagement. Plus de la moitié du réseau routier de Bogota a été financé par ce moyen.

Exemples de méthodes combinées de CPVF

Tramway, Portland (Oregon)

Le tramway de Portland, en Oregon, a été financé par la création d'une zone d'imposition spéciale, ou *Special Assessment District*, l'émission d'obligations adossées à la société des loteries de l'Oregon, le gouvernement fédéral et la publicité sur les véhicules et aux arrêts. La municipalité a créé deux districts d'amélioration locale pour assurer la desserte du district de Pearl, une zone de faible densité auparavant inoccupée. La taxe ponctuelle perçue dans les districts d'amélioration locale et les hausses de la valeur foncière attribuables à l'aménagement du territoire et à la densité ont permis de mobiliser 17 % des 56 millions $ nécessaires. Le tramway et le nouveau zonage intensifié ont fait de ce secteur l'un des marchés immobiliers les plus prisés de Portland.

Crossrail, Londres

Ce projet est un bon exemple de collaboration entre les secteurs public et privé, et allie un financement fondé sur le développement immobilier et un financement par CPVF fondé sur la fiscalité. Le coût total du projet se chiffre à 14,5 milliards £ et le secteur privé assumera la somme de 5,5 milliards £. Ce projet a encouragé le TOD, ce qui lui a valu un apport de fonds additionnels du secteur privé. Les responsables du projet ont réussi à démontrer que les risques étaient transférés au secteur privé et à montrer à la population que les grands gagnants étaient aussi ceux qui contribuaient le plus au financement du projet. Par exemple, à la station Woolwich, Berkeley Homes a versé 100 millions £. La cœntreprise a produit une analyse de rentabilité convaincante qui a démontré que Crossrail avait contribué à faire de Londres une ville concurrentielle, avait désengorgé les autres lignes de transport et conduisait au centre-ville 1,5 million d'usagers en 45 minutes. Des retombées économiques plus générales ont également été constatées.

Hudson Yards, New York

Hudson Yards est un projet intégré de 360 acres qui vise à exploiter le potentiel d'aménagement du Far West Side de Manhattan. Ce projet, qui vient d'être mis en chantier, comprend le prolongement du métro, l'établissement d'un nouveau réseau de surface, le zonage d'agglomérations de densité appropriée et de centres à vocation mixte, et la création d'un axe des congrès. Le plan de financement prévoit la récupération des revenus anticipés du nouveau développement commercial et résidentiel du secteur pour financer le service de la dette sur les obligations émises par l'Hudson Yards Infrastructure Corporation (HYIC), une société locale d'aménagement créée dans le cadre de ce projet. Hudson Yards est directement responsable, grâce à des contributions monétaires très élevées, du prolongement de la ligne 7 du métro de New York.

METROLINX

Land Value Capture Discussion Paper

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An agency of the Government of Ontario

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Prepared for:
Metrolinx
97 Front Street West
Toronto ON M5J 1E6

Prepared by:

George Hazel Consultancy

George Hazel Consultancy Ltd
3 Hill Street
Edinburgh
EH2 3JP

LAND VALUE CAPTURE (LVC) DISCUSSION PAPER

Executive Summary

This paper discusses the potential of Land Value Capture (LVC) methods for the GTHA. It focuses on the application of LVC methods around transit stations. There is significant evidence to show that the improved connectivity supplied by new transit services generates increased land and development value. This is well recognized by the development industry. It seems fair and equitable that a proportion of this additional wealth, generated by the new transportation facility, should go to funding the transportation facility. The challenge is finding LVC methods that satisfy the needs of both the public and private sector and finding projects and places where it will work. This paper explains how this can be done.

The provision of a world class transit system for the GTHA is critical to maintaining its success as a world city. Such systems not only maintain the economic competitiveness of the city region but also help to create livable, sustainable communities. They also help reduce environmental damage through increasing the use of transit, walking and cycling thereby releasing capacity for essential users of the highway system. LVC methods can contribute important funding and financial sustainability to help provide improved transportation assets.

The paper describes a range of LVC methods, some development-based, some taxation-based, and some a combination of both, and gives examples of each from around the world. It goes on to state that LVC is a valuable tool for Metrolinx and the GTHA that will help to deliver a world class transit system for the city region, thereby maintaining the GTHA's global competitiveness and high quality of life.

The Metrolinx Investment Strategy, released May 27, 2013, suggests $20 million as an annual revenue estimate from implementing an LVC strategy. This is a reasonable number and would represent a significant direct contribution from land value capture, particularly compared to what has been demonstrated in the GTHA in the recent past. However in light of what is possible, it should be considered a conservative estimate, and could be exceeded by a significant margin if an LVC program were to be aggressively pursued. It is noted that the indirect benefits of an LVC program represent even further public and private benefits, all pointing to a strong case to pursue LVC.

If LVC methods are to be used in the GTHA there are key actions that need to be delivered:

- Agree on objectives between key stakeholders
- Understand and capture value for all partners
- Develop governance and business models
- Protect the funds captured for the transit project
- Protect the independence of planning

- Protect confidentiality

There are also a number of challenges to be addressed by Metrolinx:

- Acceptance of the principle and the benefits of LVC
- A willingness to act
- Proactively seek collaboration between public and private sector stakeholders
- Potential incremental changes to policy and strategy
- Potential changes to the legal framework
- Potential changes to appraisal methods

Finally the paper concludes by listing some proposed next steps if it is decided to implement LVC methods in the GTHA and successfully secure and/or exceed the financial contribution target outlined in the Metrolinx Investment Strategy.

Introduction

This paper is an introduction to the concept of Land Value Capture (LVC). It explains what it is and the potential it brings to help fund public services. The paper focuses on LVC related to the increased value of land and development around transit stations and how some of this extra value can be captured to help fund transit and build a competitive and healthy city with a high quality of life for residents, businesses and visitors. The possible use of LVC as a transportation funding tool is referenced in the Metrolinx Investment Strategy, released on May 27, 2013.

What is LVC?

Land Value Capture (LVC) is a way to capture the increase in the value of land and development generated by the improved accessibility of transportation. Improved access has value which is reflected in land and property values just like property which has waterfront views. The focus of this discussion paper is the added value generated around transit stations.

LVC is not new

The concept of LVC is not new; in fact Canada was at the forefront of using LVC to fund its rail infrastructure. The Canadian Pacific Railway (CPR) was partly financed through giving development rights for a 48-mile wide corridor along the route to the promoters of the railway. It was the CPR that dictated both the shape and the location of cities in the new Canada based on capturing the increase in the value of the land around the railway stations to part fund the railway. In London, England the underground Metropolitan Line used the same principle; capturing land value uplift around the stations to generate the profits to fund the next section of line. This same principle can be used today for the benefit of all city residents and businesses in the GTHA.

LVC can generate new wealth and profits

The new Jubilee Line in London has been shown to have generated around £13 billion in total increased land and property value around the 10 stations between Stratford and Waterloo against a capital cost of £3.5 billion. Two reports have supported these figures. A report for Transport for London measured nearly £3 billion uplift around just two of the stations (Ref 1). It is estimated that about 10% of this total value was captured for the project, mainly from the Canary Wharf redevelopment.

A Nationwide survey in the UK in April 2012 showed that property prices within 500m of a railway station were 9% higher than similar properties away from the line. This figure was 7% in the 2010 survey (Ref 2).

A raft of surveys in North America show increases ranging from 0% to 120%. For example, a recent study in Montreal showed property increasing in value by 13% within 500m of a metro station, 10% within 1 km and 5% within 1.5 km (Ref 3).

Lastly, a study published in March 2013 in the USA by the National Association of Retailers and the Association of Public Transit Authorities, found that on average, across the study area, development around transit stations outperformed the region as a whole by 41.6%. Transit also had an effect on the resilience of property values which benefitted from transit that was well connected and had a higher frequency of service. Also households living around transit stations had better access to jobs and lower average transportation costs than the region as a whole (Ref 4).

There are many more examples around the world showing that transit increases the value of land and property around stations and how a well-designed and executed LVC strategy can ensure a significant portion of that value uplift is made available for the transit investment.

When and where does LVC work?

When people perceive value they are willing to pay for it. For example, people will often pay a premium to buy a house in a good local school catchment area or for an apartment with a lake view. In the same way, if a house has good access to where the residents want to go then that will attract a premium. This is known and accepted by the property market and development industry and there is a lot of data to back it up as evidenced by the examples above. It happens, it's additional and it's real money. In other words, the money is a reflection of the value created by the improved accessibility and the accessibility makes the land more productive; i.e. more valuable.

This uplift in value due to improved accessibility will vary depending on the local circumstances. For example, in the case of the Croydon LRT extension in south London the increase was negligible because the area already had

good public transport links (Ref 5). In other cases, however, where congestion is high and the improved access is transformational, the uplift can be substantial. A safe assumption is to use an estimated 10% uplift in land and property value within 1 km of a station provided it connects to where people want to go and the property market is growing. Research by Parsons Brinkerhoff suggests a range from 10% to 50% of capital value (Ref 6). This is new money, additional profit for the landowner or developer which only happens if the improved accessibility is provided.

It makes sense therefore that the extra profit generated by transit should be shared between the agency providing the transit, i.e. the taxpayer, and the people who own the land. It needs both players collaborating to make it work. This is especially relevant when demands for access are increasing and the supply of public money for infrastructure is under pressure. The majority of the increased value will come from within a 1 km radius of the transportation facility. The potential, therefore, to unlock this extra value through a partnership between the public and private sectors needs to be explored. This means that LVC requires collaboration between the private sector development community and the public sector that is largely responsible for the provision of transport.

If LVC is so good why is it not happening?

Part of the problem is that the current system is unable to easily release and subsequently capture this added value. This is because of the regulations and procedures put in place to ensure the independence of the planning process and fairness and transparency in spending public money, and because of developer confidentiality. From the public sector point of view it is neither possible nor desirable to give planning permissions on the back of promises from developers to fund infrastructure. From a private sector point of view it is difficult for developers to cooperate with each other due to confidentiality and the competitive nature of the development industry.

The new methods of implementing LVC seek to unlock this new wealth creation and overcome these issues whilst retaining confidentiality and public integrity. The rewards are substantial and the equity of sharing the generated wealth compelling. It seems more than fair that the funders of a new transit line, that creates new wealth and extra profits, receive a percentage of that increase. Thus there is a strong argument for a more equitable sharing between those who create the wealth and those who gain.

Don Riley is a commercial property developer and owner based in London who made millions of pounds from the building of the Jubilee Line Extension in south London. He owned a significant amount of property in a run-down part of Southwark that dramatically rose in value when the new underground line opened. The increase was due to the fact that Southwark was now connected to central London and the Financial City, Canary Wharf and Docklands, and City Airport. He wrote a book called "*Taken for a Ride*" in which he set out the gains in land and rental value generated around all the new stations from the building of the line. He had monitored these values over time. Although glad of the windfall generated, he powerfully argues that at least part of this wealth creation should return to the people who created it – i.e. the providers of the Jubilee Line - ultimately the taxpayers (Ref 7).

Why is LVC important and what are the benefits?

LVC is important for the GTHA for the following reasons:

- It helps economic growth to be achieved in an environmentally sustainable way.
- It helps build a more competitive city region and a higher quality of life for its residents and businesses.
- It helps build sustainable, healthier communities.
- It helps reduce the cost of living.
- It helps reduce congestion and pollution.

The growth of the GTHA

The GTHA has been economically very successful and is projected to experience further high growth over the next 20 years (Ref 9). The population is projected to increase by around 50% by 2031. This is phenomenal growth and underlines the attractiveness of the GTHA as a world economic center. This growth, however, brings serious problems. High growth needs to be matched to high quality mobility systems in order to maintain global competitiveness (Ref 8).

As cities develop, personal and business trips become more complex due to the increasing complexity of people's lives and customers demanding more valued and personalized services. This trend can be seen throughout the world. At the same time as demand is increasing, spending requirements of government are coming under increasing pressure. In order, therefore, for the GTHA to maintain the balance between growth and the provision of enhanced mobility systems to meet those needs, new methods of financing need to be developed to support traditional funding streams. If the mobility systems of the GTHA do not keep pace with growth requirements, then congestion and

pollution will increase, affecting the competitive position of the GTHA on the global stage. This in turn will impact on the economy, the environment and the quality of life the city region offers. In order for any city to manage its growth and maintain its competitive position a high quality transit network is required to act as the backbone for other mobility systems.

There is no successful city in the world that has managed to solve its mobility needs based solely on the car. Many have tried and all have failed. This is because movement space is a finite and expensive resource. There are only a set amount of vehicles that can pass along a road in any given time. If a city's system is based on private car vehicle occupancy of just over one, then the space requirements cannot be provided without destroying the efficiency and attractiveness of the city. To maintain a balance between quality of life and movement, the city must maximize the productivity of its movement space – its roads, railways, etc. - and that means moving the maximum amount of people and goods along the movement corridors in any given time.

The most successful cities have developed this balanced approach based on high quality transit that maximizes productivity allowing essential private car and freight road users to gain the benefit of reduced congestion and pollution. This is why the funding of transit is critical to the future economic success of the GTHA. In this context, LVC can help both the up-front funding and the long-term financial sustainability of transportation investment.

The GTHA and Metrolinx have developed a strong land use and transportation policy framework that lays the foundation for a successful future. "*Places to Grow*" and "*The Big Move*" say all the right things and provide a good policy and strategy basis for delivery of what is needed (Ref 9). The Metrolinx Corporate Real Estate Policy also sets the right policy framework, but may need to evolve in order to match policies with the objective of maximizing LVC potential. This may lead to changes in organizational real estate policy, involvement in the market, and in the delivery of development projects. Planning and land use, transportation, and real estate policies need to complement each other and work together to maximize the potential of LVC. This may need to be supported by new delivery and governance systems to implement those policies and programs, such as the development of collaborative arrangements with the private sector and other public sector agencies. It should be noted that the Corporate Real Estate Policy does not prevent Metrolinx from getting started in capturing important LVC revenues, however, over time as LVC processes mature the Corporate Real Estate Policy may need to be updated to reflect the nature and breadth of the LVC-related activities Metrolinx is engaged in.

LVC helps to build more competitive and higher quality cities

The provision of sustainable, mixed use communities around transit stations brings a range of benefits over and above LVC funding. It is clear from the evidence that the uplift in the value of land and development around transit stations, due to the increased accessibility of a new transit line, can be substantial and is certainly worth trying to capture in order to help fund new transit lines. However, the provision of Transit Oriented Development (TOD)

around transit stations also increases transit ridership, and therefore the fare income of the transit line, and increases the viability of local services; improving the quality of life and attractiveness of the area and helping to build community. This focused development also reduces congestion for private and public road users, including the movement of freight. There are, therefore multiple benefits to pursuing a strategy of LVC application that go beyond funding for transit.

LVC helps to build sustainable, healthier communities

In order to maximize the potential for LVC there needs to be a clear link with land use planning, urbanization, building communities, and service locations. This is set out in "*Places to Grow*" and means that there needs to be planning policy and regulatory support at the municipal level for TOD around transit stations and the promotion of intensification around transit stations that supports communities and the services they need. This is highlighted by the "*Report on Metrolinx Land Use Planning Authority*" (Ref 10) that was presented to the Metrolinx Board in November 2011. The report examined the powers related to regulations and approvals for future development around existing anchor and gateway hubs and GO station sites with respect to final land use and density approval and compared them to existing Metrolinx powers. The report lists recommendations that need to be considered if mobility hubs that support sustainable developments and communities are to be delivered. This also needs to be tied in to a continuous project evaluation process that recognizes the benefit of LVC and sustainable communities and integrates with, and further builds on, the current appraisal methods.

Research shows that certain lifestyle trends, which are global, strengthen the potential of TOD and consequently the impact of LVC funding. Research in the TOD and Land Use Newsletter in New Jersey (Ref 11) shows that there is a trend for young professionals in their late 20s to mid-30s to value the quality of urban life and want to live near transit stations which helps generate that increased quality of life. Baby Boomers who are downsizing are also choosing Downtown accommodation and locations around transit stations.

There is also evidence that as fuel prices continue to rise houses with no connection to transit are more likely to suffer reductions in value than those Downtown or adjacent to a transit station. This was clearly seen in US cities during the last fuel crisis. Therefore, as congestion rises, the cost of fuel rises, and the importance of reliable sustainable mobility and quality of life increases, the relevance and importance of TOD and LVC opportunities will also increase. (Ref 15)

There are social changes going on as well in younger generations. Research shows that the percentage of young adults possessing an auto license is falling in North America, Europe and Australia. For example, the University of Michigan published data to show a 5% reduction in the percentage of 20-24 year olds having a license between 2004 and 2008 (Ref 12). These new generations did not grow up in an age where the car was king and the first thing any young person wanted to do was buy a cool car. They have been brought up in the information age and often do not see the need for a car in urban areas. It is more important to have the latest smart phone than a driving license. You can't social network driving a car! This will be particularly true of generation I – those born after 2002. For Generation Y, the millennials born between 1979 and 1995, use of transit has risen 40% according to a report from the Urban Land Institute – "*America in 2013: A ULI survey on views on housing, transportation and community*" (Ref 13).

In terms of lifestyle changes the Federal Highway Administration showed that the demand for compact housing within 0.5 mile of a transit station is expected to rise to more than 14.8 million households by 2025 from 6.2 million in 2000 (Ref 14).

There also needs to be an examination of how LVC could support the provision of transit to existing and proposed suburban commercial centers - linking these centers to residential areas, the Downtown, and other key centers such as employment or destination sites. It is more difficult to capture value uplift from existing development but one way this can be done is through reducing car parking and allowing intensification of the land use.

Other benefits

TOD around transit stations offers other benefits as well. There is a lot of research on comparative TOD cost of living versus car-oriented suburban living. This shows reductions in the cost of living for the TOD developments. This disparity can only increase in the future as the price of oil rises and congestion increases. Griffith University in Brisbane has developed oil dependency factors associated with car-oriented living showing the vulnerability of such housing to market prices (Ref 16).

TOD living also increases health levels as it encourages more walking and cycling. The density of residential units improves the viability of local shops and services which increases the vibrancy and commercial sustainability of the local area: a virtuous circle.

TOD development reduces the amount of kilometers travelled because of improved access to local services and other longer distance services by transit. This increases walking and cycling to local shops, offices and other

services and increases the efficiency of the infrastructure, both road and rail. Thus the cost of travel reduces and productivity increases. This is key to a successful, competitive city in the future and encourages the growth of a knowledge economy both within TOD areas and throughout the city region.

The Definition of LVC

There is a need for a clear definition of LVC in the context of this paper because it comes in many forms. It is self-evident from the name that LVC relates to capturing, in some way, an increase in land and property value but this raises some questions. Is the increase in value being measured due to a range of factors or only to increased accessibility generated by an improvement in the mobility services provided? If LVC is defined as value generated by improved mobility then the definition is more clearly focused. However, it could be argued that value generated from the granting of planning permissions, or from granting intensification of development around a transit facility is valid, and this widens the definition. Even if the definition is restricted to mobility effects, does this apply to all mobility or just to transit? It is important to define what we mean.

This discussion paper defines the application of LVC with respect to the increase in the value of land and property around transit stations caused by the transit service. Thus the paper focuses on LVC uplift from transit and on LVC funding for transit, a major need in the GTHA. Such an LVC definition does not mean that other forms of wealth generation cannot act in partnership with LVC uplift from transit. Indeed uplift from the granting of planning permission and land use intensification can provide additional funding and mutual benefits. Metrolinx can implement LVC now through collaboration with public and private sector partners using voluntary methods as explained later in this paper. Metrolinx has the additional advantage in that it owns land around potential transit stations so should be developing LVC methods in the future that can utilize these assets.

Existing LVC methods tend to focus on either specific developments or a general taxation or levy. The first is a development-based approach and the second a taxation-based approach. Most of the methods, however, include elements of both approaches and it is therefore often difficult to categorise them into one or the other. The Appendix details a number of case studies that demonstrate this spectrum of application, from the Edinburgh Rail Ltd method that is wholly development-based to the Columbian Valorization Tax that is wholly tax-based. The key point to note is that most LVC methods include elements of both depending on the local circumstances and the development patterns and potential. The following section highlights the main attributes of both LVC approaches.

Development-based methods

The most important attributes of development-based methods are that:

- They have the likely potential to raise significantly more money than any current examples of taxation-based solutions.

- They directly link LVC funding contributions to the project generating the increased profits. This direct link is attractive to developers and the public.
- LVC contributions need to be agreed on as early as possible. The largest gains are to be made in the initial stages of the development process before options are taken and site ownership transferred. Any agreed contributions at this stage can be accounted for in the development process that follows. As time goes by, and certainty increases, value is taken out as developers anticipate increases in land value around the new transit. Hence, LVC is best secured before the line and station locations are fixed.
- There needs to be a perceived shortfall in public funding for the project that is recognised by the private sector. If landowners and developers think that the new transit facility will be 100% funded by the public sector there will be reluctance to contribute to the funding through LVC gains. If they believe, however, that the public sector cannot or will not wholly fund it and the only way to secure the increased profits is to jointly fund it with the public sector then they will participate.
- Development-based methods are market driven and can be seen to have less dis-benefit than taxation-based solutions. These methods offer an alignment of interest for all stakeholders. For Metrolinx it offers a new source of funding additional to government funding, bringing more flexibility. It also shows Metrolinx to be financially responsible because the agency is then seen to be looking for alternate funding sources not reliant on increased taxation.

Development-based methods fall into two sub-categories – those where the transit provider is directly involved in delivery of the development and those where the transit provider works in partnership with the development industry but is not involved in the development delivery.

Examples of the first sub-category are the method used by the Mass Transit Railway Company (MTRC) in Hong Kong, the Japan Railway Construction Public Corporation (JRCC), and the Oerstadt project in Copenhagen. All of these examples are detailed in the Appendix. If Metrolinx actively participates in development-based methods, it gains more direct control and potentially greater reward. However, it requires development experience and expertise, as the commercial risks can be significant. These risks can be mitigated by hiring the right staff or procuring the right expertise. However, in the Oerstadt project in Copenhagen, where all the land was publically owned, the market changed, the transit cost was much higher than initially thought, and the projected development took much longer than expected (See Appendix).

Transit authorities are not traditionally set up for taking on the developer role and there are issues with respect to risk and the public purse. Land banking[1] is potentially attractive but also carries a considerable risk reward profile that

[1] Land banking is the practice of purchasing land that may not be ideal for development today but will be adjacent to in-demand transportation facilities or other attractive infrastructure in the future. This requires the purchaser to have sufficient liquid capital to spend on land purchase without expectation that the investment will begin to see returns in the short-term.

can sit uneasily in the public sector. Indeed there are those who argue that active participation in the development industry is not part of the public sector's role. However, this is different if the transit authority owns land around the transit line. If this is the case then the authority can be in a strong position to lever in appropriate development and joint development partnerships. As stated above, these risks need to be carefully evaluated and, if necessary, mitigated to minimize exposure for Metrolinx.

The second sub-category of development-based methods relies on a voluntary partnership with the private sector where each partner understands the business of the other and agrees to share the mutual benefit. This mutual benefit comes from the fact that Metrolinx provides the transit that generates uplift in value due to the improved connectivity, and the landowner/developer owns the land and development rights. Each party needs the other. A voluntary partnership is then formed where the increase in value due to the transit is equitably distributed between the developer/landowner and the transit provider to help build the transit that will generate the value.

Agreements on the appropriate form of contribution from the private sector are negotiated on a site-specific basis and will vary depending on the unique characteristics of both the site and the transit facility linkages. An example of this approach has been developed by Edinburgh Rail Ltd in Edinburgh, Scotland and is detailed in the Appendix. The advantage of voluntary development-based LVC methods is that they do not require any new legislation and work with the grain of the development industry. However, they only work where the private sector is convinced the transit facility cannot be fully funded by the public purse. This needs to be emphasized and shapes the projects chosen for LVC application.

Summary of the key attributes of development-based methods:

- Have the potential to raise significantly more LVC funding.
- Directly link those who benefit with those who contribute.
- Are best applied to new, fixed transit infrastructure.
- The funding potential is greater the earlier the methods are applied.
- The majority of LVC value is generated within a 1 kilometer circle of a transit station.
- There needs to be a perceived shortfall in public funding recognized by developers.
- Voluntary development-based methods require no new legislation; they can be applied now.
- They are market driven and are based on sharing extra value generated through the new transit provision.

Taxation-based methods

The other main category of LVC applications involves taxation-based methods. These try to capture the increase in value due to improved accessibility through various forms of taxes or levies on the completed developments. They can be applied to existing developments although this is more difficult. This category can take the form of Special Assessment Districts, Development Charges, Tax Increment Financing, Land Value Taxes, Impact Fees and other forms of roof tax/levies. All these methods are set out in detail in the report by Trillium Business Strategies Inc on "*Land value capture as a tool to finance public transit projects in Canada*" published in March 2009 (Ref 17).

The methods usually require legislation, unless they take the form of a voluntary levy, such as within a Local Improvement District (LID) area where the residents and businesses have voted to pay a levy. They can be unpopular with the private sector and have been seen to result in suppressing or diverting development away from the taxation area. They can also be a blunt instrument trying to extract value where there is none, or missing large increases in value because they operate on fixed schedules of rates. They can act as a disincentive for development or favor development in more profitable areas of a town or city to the disadvantage of poorer areas. For example, there is evidence that when taxation districts are defined around transit stations to capture increased value, the developers either delay their plans, divert their efforts to other areas where it does not apply, or develop just outside the taxation boundary. This was seen in Dublin with respect to the LUAS rapid transit system and around the Sheppard Subway line in Toronto. Nevertheless, they can be used effectively and have been applied successfully around the world. The Appendix details examples.

Taxation-based systems are blunt instruments that don't always clearly articulate this direct link between investment and benefit. This means that it is more difficult to demonstrate the value chain between those who pay and those who gain. This can make it more difficult to deliver taxation-based methods.

> The UK government has tried in the past to introduce a land and development tax but to date has been unsuccessful. Currently, UK local authorities are trying to introduce the Community Infrastructure Levy (CIL) and there are two schools of thought on the proposal. The first argues that development charges have failed four times since 1947, are wrong in principle and impose a drag on economic growth. The second accepts that a clear straightforward development charge could be a real benefit but changes need to be made to the current structure (Ref 18).

A combination of methods

As highlighted above, most LVC methods contain elements of both development-based methods and taxation-based methods. For example, it would be perfectly possible and proper to implement an LVC system based on the voluntary contributions of developers and implement a levy/impact fee/development charge as well. A key principle, however, is that LVC funding from increased value generated by transit can only be captured once. It must be made clear that any other charge, levy, or tax is related to other benefits, other land or property, e.g. existing development around transit, or to fund such things as local roads, local services, parks, etc. London Crossrail is an excellent example – the funding includes direct voluntary payments to the project as well as area-based charges, or taxes (i.e. the Community Infrastructure Levy), which are all contributing to the project. The business community has largely been supportive of these area-based taxes because Crossrail will help London continue to grow as a centre of business.

There are also other methods that have been used successfully that can fall into either category. For example, the selling of density rights used in some South American countries, the selling of air rights above stations, or sale and leaseback arrangements. There are many variations of LVC that can be explored once it has been decided in principle to use LVC methods.

The Metrolinx Investment Strategy recommends a combination of methods in the form of asset maximization through a development-based approach paired with the use of Development Charges in local municipalities.

What needs to happen in the GTHA to deliver LVC?

If LVC methods are to be used in the GTHA there are key actions that need to be delivered:

- Agree on objectives between key stakeholders
- Understand and capture value for all partners
- Develop new governance and business models
- Protect the funds captured
- Protect the independence of planning
- Protect confidentiality

Agree on objectives between key stakeholders

There is usually a tension between different sets of objectives. For example, there may be a conflict between maximizing LVC and the optimum number of transit stations to maximize operational efficiency, or between municipal educational, social, or environmental objectives, and maximizing TOD around transit stations. This is why an effective collaboration between all the key public sector players is essential, delivering an agreed set of objectives and

priorities for each LVC project. The collaboration can take many forms – voluntary, Special Purpose Vehicle, or statutory. The form of the partnership would be the subject of further discussions and analysis with the key partners.

Understand and capture value for all partners

In order to capture uplift in value in land and development due to new transit, the partners need to be clear on where the value is, how much it is, and who benefits. There also needs to be an understanding of the value for each key partner and how to capture it – i.e. for regional government, municipal government, private sector companies, and last but not least the individual consumer. A lack of collaboration results in reduced wealth creation. In the new world of increasing demand and reducing resources, there needs to be an equitable sharing of the wealth created to the mutual benefit of all concerned. In addition to the wealth generation potential of transit through increased connectivity, the landholdings of Metrolinx can be used in a collaborative way to act as a catalyst for sustainable development around transit stations, levering in private sector participation and funding, and creating new and exciting joint development proposals. Municipal participation in LVC can help unlock and leverage revenue at the local level to help advance transportation priorities and could set a precedent for use of new mechanisms by local governments to make financial contributions to transportation projects.

Develop new governance and business models

Achieving agreed objectives, identifying the value, and distributing that value in a fair and equitable way demands effective governance and business models – this is always a key issue. New governance and business models need to be developed to achieve LVC delivery and this will require the participation of a number of partners; including the various departments in Metrolinx, relevant departments at the City, Region, and Province, and with the various private sector companies.

There needs to be two levels of engagement. Firstly at the strategic level where general agreement to implement these LVC policies is secured, and secondly at the delivery level where the value is captured. Metrolinx has already identified LVC at the strategic level through identifying LVC in its Investment Strategy; a good start. Repeating and reinforcing of LVC as a strategic action would be helpful, while the key at this time is the second step, delivery. Metrolinx is well suited to bringing together the key players in both the public and private sectors. It has a region-wide remit, and is owned by the public sector but is managed by a Board comprising members drawn from the private sector – an interesting and innovative structure. Importantly, it is not directly responsible for local planning decisions. Metrolinx should act as the catalyst between key bodies; working with public sector agencies on the one hand and the private sector on the other.

The key thing for developers is that the money they have paid through the LVC process is secured for the purpose for which it was given. They are often willing to collaborate to achieve mutually agreed objectives but are less keen

on getting involved with the complexities of public sector governance. Demonstrated successes can help build confidence that the complexity is manageable and worth working through.

Protect the funds captured

One of the key issues with respect to any LVC project is the protection of funds raised for specific transport projects. Development-based methods have an advantage here in that any LVC funding can usually be linked directly to the project generating the increased funding. It is straightforward to show through, for example, a protected Trust Fund, that all monies raised for the project will be used for the project. This idea is contained within the Metrolinx Investment Strategy and should be strongly supported.

Protect the independence of planning

It is very important that the independence of planning is maintained at all times. For that reason, details of any voluntary contributions should be kept confidential to Metrolinx so that no undue pressure is brought to bear on any individual planning officer. However, it is perfectly in order for municipalities to know that LVC is involved in the project and to discuss in general the level of development and intensification around transit stations. It is also possible for the Trustees of the fund to verify the level of LVC agreements in the fund and the probability of them coming to pass with respect to gaining planning permission. One of the roles of the Trustees is to monitor whether sufficient LVC payments have been received and whether the conditions have been met, as the details of LVC agreements can vary. However, care must be taken to avoid undue influence on the planning process from the potential of large LVC payments. It is therefore advantageous that Metrolinx leads any LVC initiative, as it is not directly responsible for the regulatory planning process but is central to infrastructure provision.

The Trustees are there to act as independent keepers of the funds, receiving LVC funds from developers and disbursing them to the transit provider when required. They are able to verify the veracity and legality of the LVC agreements and the generated funds from them. They are not, however, a replacement for the professional skills and resources needed to deliver LVC methods and agreements.

Protect confidentiality

This is more of an issue for development-based methods where discussions take place with separate developers. There is always a tension between public scrutiny and freedom of information and respecting the confidentiality of development proposals. It is not so much an issue with taxation-based methods. In terms of gaining the support of the private sector for any LVC project it would be helpful to have that support at two levels; firstly to have the general support of the development industry for LVC methods being applied and even for advice as to where they should be applied and secondly to have the support of specific developers for specific projects. The form of the general support would be the subject of discussions with the private sector.

The detailed discussions about individual projects would have to be confidential to the specific partners. This is not new to the public sector as they deal with confidential reports all the time but the framework for this and the rules of engagement for both levels need to be clearly understood.

What are the challenges to the implementation of LVC?

The implementation of LVC methods in the GTHA will require the following challenges to be addressed:

- Acceptance of the principle of LVC and the benefits
- A willingness to change and to act
- Collaboration between public and private sector stakeholders
- Potential changes to policy and strategy
- Potential changes to the legal framework
- Potential changes to appraisal methods

Acceptance of the principle and the benefits of LVC

There needs to be an acceptance in principle from all the key players that LVC is a valuable tool that can contribute to the future funding of transit infrastructure and the long-term success of that infrastructure. There also needs to be an acceptance that LVC is not the panacea for all transport needs. It is important, and can add substantial funding to a project, but it will not work everywhere. There are situations where there is no uplift, the uplift to be reasonably captured is minimal, or the uplift is difficult to be captured so there needs to be an understanding of where it can be applied most effectively. This does not mean that projects should not go ahead if they cannot generate LVC funding, simply that LVC methods are not applicable in these cases.

A willingness to change and to act

The application of LVC methods often requires changing some traditional views and a willingness to work across non-traditional boundaries with partners who may have different values and objectives. However, the potential rewards for the city region and its people and businesses should make this attractive and acceptable. The willingness to change needs to be accompanied by a willingness to act. This requires delivery models to be developed in collaboration with the key stakeholders.

Collaboration between public and private sector stakeholders

Any successful LVC method requires collaboration and Metrolinx will need to develop strong working relationships with municipalities, senior levels of Government, and the private sector. This needs to work at two levels -

strategic forums and working arrangements related to specific projects and sites. This will require time and effort but will pay dividends in the future. There has to be recognition of each others' needs and an understanding of possibly different values and objectives. There needs to be an acceptance by both the public and private sectors that they need to work together to deliver effective LVC projects for the benefit of the citizens and businesses of the GTHA.

The public sector has to work with the market and understand its strengths and limitations. There also needs to be a willingness of the municipal planning authorities to allow and support, and preferably maximize, development around transit stations. The creation of critical mass around transit stations to ensure vibrant mixed-use centers is vital. This drives the whole process and delivers the benefits in terms of sustainable, high quality living and LVC funding.

The private sector has to understand the legislative, procurement and public good elements of government. In other words there needs to be collaboration between the key stakeholders to drive the creation of value and the subsequent appropriate capture of some benefit for all.

The success of this collaboration will depend on three things:

- Building mutual trust and understanding.
- Agreement on shared objectives and benefits.
- Agreement on the delivery mechanism.

The principle of LVC is usually acceptable to the private sector. The key issue is finding a delivery method that brings certainty, competitive equality and fairness. In other words there needs to be a method that captures and shares the extra profit in an equitable way, maintains the independence of the planning system, adheres to the rules and regulations of the public sector, and maintains competitive equality and the confidentiality of private sector partners. Competitive fairness is important so the method should be applied uniformly. This does not mean that the uplift will be valued and captured in the same way everywhere, but the principles and method of delivering LVC will be relatively consistent. However, since every site is unique and every development opportunity is unique, 100% consistency is very difficult to prove.

Support from senior levels of government is very helpful. For example, Government could require an LVC input wherever possible for all project submissions and/or agreements or approvals. It could also be stated that public funding for transit is tied to municipal support in terms of progressive TOD planning policies. In this context it is good that the concept of LVC is referenced in the Metrolinx Investment Strategy.

There will need to be new business models developed to deliver the LVC methods chosen. The form of these models will depend on the LVC method and the views and objectives of the partners. These models need to recognize the need for confidentiality whilst retaining the independence of the land-use planning process.

Potential changes to policy and strategy

LVC is implicated in the Metrolinx Investment Strategy as a potentially significant transportation investment tool. The Investment Strategy estimate of LVC generating an incremental, dedicated revenue stream of $20 million per year is conservative but reasonable, however more could be achieved if LVC was pursued aggressively by government and government partners in collaboration with the private sector. The basis of this assertion can be thought of in two ways.

Firstly, the Investment Strategy proposes spending $23 billion for large capital Next Wave transit projects over a period of less than 20 years. If these projects were built in 15 years then this would equate to a $1.5 billion annual spend with $20 million per annum or 1.3% of the total capital cost being paid for through LVC activities. If this was calculated on Net Present Value basis at current Government borrowing rates, then it would be 1.7%. If LVC captured 3.5% of the increased value, rather than the proposed 1.7% estimate then this equates to 2.5% of the total capital spend of $23 billion. Comparing these percentages to those measured in the projects referenced above (Ref 1 to 4) shows that average land value uplift due to transit of between 5% and 10% is achievable; therefore anything below 5% is conservative.

However, the percentage of LVC depends more on the density of development around transit stations rather than the capital cost of the project hence another way of estimating the percentage of LVC generated from development around transit stations is to use the area and density of residential, commercial and leisure development proposed. This gives a direct link between the proposed development and the potential LVC uplift. It is impossible to generalize on the impact LVC could have because it is site and project specific and depends on the attitudes of public and private sector agencies. For example, it is possible that a small project involving a single transit station surrounded by significant development could generate sufficient LVC to pay for all of the capital costs. However, the percentage captured on very large projects is usually much smaller and could be in single figures depending on the volume and density of development allowed around the transit stations. This can be seen in the examples quoted in this report and the research referenced in the Appendix (Ref 1 to 4). It is inadvisable, therefore, to quote a general LVC target percentage as the percentage will be specific to the project and the development allowed, which can vary significantly.

There are three key points to be noted:

- Firstly, that the more development allowed within 1 km of transit stations, the more LVC funding can be secured and the higher the percentage of capital costs covered.
- Secondly, that this is new money and extra profit that will not materialise if the transit is not provided. Therefore it is equitable that this extra gain be shared between the parties creating that new wealth.
- Thirdly, LVC encourages intensification because this creates even more capital value and more revenue income from increased ridership, helping to build sustainable communities and supporting local services and better urban form.

An interesting exercise, that may support the Investment Strategy target as being conservative but achievable, would be to estimate the number of residential units and areas of commercial and leisure developments around proposed transit lines and take varying percentages of their value, say at 1 %, 5 % and 10%, to compare with the $20 million per annum Investment Strategy target. These figures do not include the significant long-term value creation that is often lost in the short-term debates about transit provision. The long-term financial benefits of ridership, more efficient and valuable built form, and other benefits should be included in overall benefits as they will push land value capture returns higher.

Planning for LVC is an excellent test that will confirm if there is acknowledged value from transit from property developers - and therefore is a good test of risk as to whether or not additional development attributed to the additional transit provision is in fact generating intensification of demand and therefore increased LVC.

Potential changes to the legal framework

The application of LVC methods will raise legal questions, however, there is no reason under Canadian law that LVC cannot be used. The detailed procedures to deliver LVC will need to be developed.

LVC is potentially a policy and asset maximization tool. Metrolinx holds significant assets and is in the process of examining how these assets can be maximized for the benefit of Metrolinx and the city region. The focus of this work is on how to realize intensification and additional revenues from Metrolinx-owned property and on lands adjacent to Metrolinx-owned transportation corridor and station assets. Part of this examination should eventually include a review of current development and real estate policies to ensure that they are not restrictive with respect to the application of LVC methods. Indeed, they should positively help the introduction of such methods. Elsewhere in this paper it has been stated that while the current policies do not prevent the implementation of LVC, they likely restrict LVC

application on a broader basis that ultimately may need to be revised by Metrolinx if the initial LVC demonstration projects are successful.

Potential changes to appraisal methods

Access has been traditionally measured in counting minutes/seconds saved by travellers – both car and transit – and the associated benefits that can be attributed to the reduction in travel time as a result of implementing a transit project. Metrolinx uses this method in its Benefits Case Analysis (BCA), and other planning and investment analysis activities. The application of LVC methods will require these appraisal methods to be augmented with LVC analysis. For example, LVC will take a more traditional real estate analysis and financial metrics/returns approach versus looking at appraisal that focuses primarily on time saving found in traditional transportation analysis. A BCA does a good job at present in assessing transportation projects; factoring in LVC could result in double counting or show the undervaluing of some transit schemes that generate substantial LVC value. Traditional transit appraisal methods often do not account for land value uplift (and potential capture scenarios) because land use and the associated implication of how changing or tying land use can affect how one should evaluate such transit investments.

Regional growth projections often guide planners to analyze an investment within a prescribed growth projection for an urban region. However, if you can show how increasing density on transit station land or the surrounding area can affect ridership and financial returns, because of the associated change in land use policy, this will influence the decision to make or not to make a transit investment (and how much effort is required to ensure intensification will occur). The only way to account for this is to show how real estate is directly tied into transit investment decisions. The advantage of LVC appraisal is that it is clearly seen to generate "real money" which can be used to provide better access and hence improved competiveness, which in turn should support the financial performance of the transit and generate further benefits which can be accounted for in a variety of appraisal methods already in use.

The Next Steps

This discussion paper has explained what LVC is and has set out the potential benefits that it can bring to the GTHA. It also highlights the challenges and areas for action if LVC methods are to be used to help deliver high quality transit for people and businesses across the region. If Metrolinx decides to pursue a variety of different LVC methods, then an Implementation Plan needs to be developed. Metrolinx needs to clarify responsibilities within the existing staff structure and teams in order to deliver on these actions suggested below. However, to move this forward quickly, accountability for early actions could be delivered through the existing Investment Strategy and Project Evaluation team working closely with resources and expertise in Planning, Real Estate, and other Finance areas within Metrolinx. A working group or committee structure that ensures the resources, expertise, and

existing work related to LVC should be brought together to ensure maximum collaboration and impact.

Action 1: Metrolinx should publically commit to the implementation of LVC in the GTHA

There is no doubt from the evidence around the world that there is substantial additional wealth created around transit stations, by increased accessibility, if the market conditions are right and the transit is in the right place and going to the right destinations. In addition, the principle of LVC is generally accepted by the private sector. There is therefore a sound case for Metrolinx to pursue the application of LVC methods where appropriate.

There should be an early statement from Metrolinx stating that it wants to include LVC methods within its financial toolbox. To some extent this has already been stated in the Metrolinx Investment Strategy, but a strong statement endorsing this and expressing a willingness to work in collaboration with the private sector would be welcome and arguably essential, thus building on the Metrolinx Investment Strategy endorsement.

Action 2: Metrolinx should establish collaboration between public and private sector agencies

Metrolinx should establish relationships with the key players in the public and private sectors to gain support for LVC in the GTHA at both the strategic and local levels. At the strategic level this could involve a Metrolinx/private sector forum and a Metrolinx/public sector forum. Discussions will need to take place with respect to who the representatives are on each forum. The key benefits of these strategic forums are that general support for the principle is gained from the public and private sectors, and the support base is laid for collaboration at the individual project level. The local collaboration at the individual project level involving the relevant public and private sector stakeholders is essential. This collaboration could also benefit transportation planning, as Metrolinx will get direct input from developers as to what transit schemes they think add value and would generate LVC. This could include Project Development Committees, as used in some London projects like Canary Wharf, Battersea Power Station, and the Northern Line Extension.

To enable the collaboration process to start, Metrolinx should consider inviting key stakeholders to a round table event to discuss the form and delivery of these forums.

Action 3: Implement short-term demonstration projects

The best way to demonstrate the potential of LVC is to do it. The implementation of LVC should therefore start with short-term demonstration projects. These demonstration projects should include data collection, performance monitoring and evaluations of the benefits of LVC so that a database of local experience is built up for future business cases. Site plans, drawings and other information for these site projects would be collected. In

the longer term, Metrolinx will have to develop a site selection methodology, in collaboration with the private sector, so that a pipeline and timetabling of appropriate projects are identified. In some cases, Metrolinx may select the sites to be brought forward, however, to maximize the realisation of value from potential opportunities, the private sector should be bringing forward ideas too. In fact some of the opportunities will be more effectively advanced if they are private sector led while Metrolinx is fair and transparent about its criteria for participation.

In the short-term, Metrolinx should use the collaborative forums established under Action 2 to identify one or two demonstration projects. For these projects the LVC method used would have to be a development-based voluntary method because they need no new legislation, they work with the grain of the market and they can be delivered quickly.

The opportunities around uncommitted transit infrastructure, like the East Bayfront LRT, or additional new GO stations, are particularly attractive projects in this context.

There are also seemingly less attractive projects in this context but where value creation and value capture potential is still possible. For example, it is harder to capture LVC for committed infrastructure. In this case, however, additional value can be created through better connections or access than the committed infrastructure provides, or enhancements that increase the value of building through greater value per sq. ft. or greater density allowance. For example, the Eglinton Crosstown is a committed project but as long as there is some flexibility regarding exact station locations and/or access and design, there is some, albeit small, value creation and value capture potential.

Action 4: Implement the Metrolinx staff structure and processes to deliver LVC methods in the longer-term

Metrolinx will ultimately need to build and formalize a long-term delivery team, defining their roles and structure with a clear mandate and responsibilities for developing LVC methods and TODs around transit stations. Members of the team need to have a range of skills including the relevant experience and qualifications in real estate deal making and development delivery. Metrolinx also needs to establish an ownership/participation structure on a deal-by-deal basis, an operations/asset plan, and an Investment Committee. Staffing costs will be small relative to the value of pursuing a successful LVC program.

Action 5: Develop and establish guidelines and a site selection criteria framework

Metrolinx should establish development principles that will act as guidelines for all TOD and economic hub development. This will involve conducting due diligence, market research, demographic analysis and working with the development and private sector to build market intelligence. Since one of the benefits of using LVC is to monetize the value, a significant emphasis has to be placed on the financial returns and analysis.

This process will need to include specific development principles and guidance at the project level. This action will be done in partnership with the two forums established under Action 2.

It is important to be clear that the selection methodology doesn't mean that a private sector collaborator cannot bring forward a site that makes sense for LVC; rather, the private sector should be encouraged to do so. It should be for Metrolinx to create a clear, transparent set of criteria that is seen to be equitable and accessible and that will be used to assess and initially consider LVC opportunities.

Metrolinx should establish a site selection methodology that includes parameters like a shortfall in funding, the value opportunity of creating improved access to key locations, potential for TOD around the stations, a supportive planning regime, attractiveness to the market with respect to development, and a willingness from all the key stakeholders to support the project.

Metrolinx should develop an inventory of where significant development opportunities exist adjacent to existing or potential future transit. Metrolinx will need market expertise and/or feedback to help narrow the sites to be pursued, and will need to engage the community and the development sector. When the above actions are implemented it will then be possible to develop a pipeline and timetable for LVC projects where there is a) value to be pursued, and b) willing partners with which to create that value.

Action 6: Develop a working framework with the key public and private sector agencies

Metrolinx should establish a working framework with municipalities and/or cities and their respective planning departments to ensure lands surrounding transit stations can be re-designated for high density mixed-use and/or re-designate those transit station areas or corridors as urban growth centers where possible.

Metrolinx should also establish a working framework with the development sector to ensure the maximum benefit from LVC for transit funding whilst ensuring a fair and equitable return for the private sector.

Both of these actions will use the partnerships and collaboration established through the two forums of Action 2. Metrolinx should also leverage off multi-stakeholder engagement/conference mechanisms to engage the market and community.

Action 7: Establish governance and business models to deliver LVC projects

Metrolinx will have to develop models of governance and business models to deliver LVC in the GTHA.

This is an inevitable consequence of deciding to implement LVC and will take time and require discussions with the key partners. There are case studies from around the world which will help, but they will need to be adapted to the GTHA situation. This action needs to be in collaboration with key public and private sector stakeholders.

Building on the momentum of the initial demonstration projects, it will become necessary to formalize and optimize the enterprise operation(s) of creating and leveraging LVC.

Action 8: Establish a pipeline and timetable for the long-term delivery of LVC projects in the GTHA

Metrolinx should produce a long-term pipeline and phased timetable for the delivery, monitoring and evaluation of LVC projects in the GTHA.

The actions proposed enable LVC to be delivered at sites across the GTHA. Each project will be different and may involve the application of different LVC methods. This will emerge from detailed project by project analysis. In developing a sophisticated, accountable, and transparent LVC delivery and evaluation program that respects commercial confidentiality, Metrolinx will continue to build the trust required to become a successful partner with both private and public sector partners. It should be made clear that this pipeline and timetable possesses a flexibility that will allow it to assess and, if appropriate include, new ideas and proposals from public and private sector partners.

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Appendix: Examples of LVC Methods

These case study examples give a range of LVC methods from the Edinburgh Rail Ltd that relies wholly on voluntary sharing of additional development profit to the Columbia Valorisation Tax which is a straightforward taxation LVC method. The examples demonstrate the range of combinations of development-based and taxation-based methods that are possible and the spectrum of LVC methods.

Edinburgh Rail Ltd

The Edinburgh Rail method of LVC is based on a voluntary partnership with developers and landowners. It negotiates Contribution Agreements (CAs) with developers around potential transit stations. These CAs are based on a sharing of the land value uplift between the developer and the transit provider. The funding generated by the method is placed in a protected Trust Fund linked exclusively to the transit project. It is a method that goes with the grain of the market and equitably shares the wealth created by the increased accessibility of the transit. It only works where there is development potential, the transit line opens up areas that people want to go to and the private sector is convinced there is not enough public funding to provide the transit.

Edinburgh Waverley main railway station, central Edinburgh

Source: http://www.rail-news.com/2010/08/13/edinburgh-to-glasgow-improvements-programme-contracts-awarded/

Oerstadt, Copenhagen

This was a joint venture between the Danish Government and the City of Copenhagen. The Government donated 310 hectares of land between the city and the airport and Oersund Bridge to Sweden. The idea was to fund a rapid transit rail system to the airport and bridge through capturing the increase in land value due to the improved accessibility of the rapid transit. This would pay for the capital costs. In addition, land taxes were planned to create a revenue stream capable of funding operational costs or re-paying loans required for the construction. A new development company was formed to deliver the project. Unfortunately, the rapid transit opened 3 years late and 800 million Euro over budget. This was attributed to poor timing with respect to the economy and a resulting lack of demand for the development. The resulting urban development is successful for many reasons, but this case study also provides lessons regarding the risk of development and transit system construction.

Oerstadt Development Transit, linking Oerstadt to Copenhagen and the airport

Source: http://www.nytimes.com/2012/03/06/business/energy-environment/in-new-copenhagen-suburbs-aim-is-sustainable-living.html?pagewanted=all&_r=0

Hong Kong Mass Transit Railway Company (MRTC)

The MRTC is a government-led public leasehold system. It allows the MRTC exclusive rights on long-term 50-70 year government-controlled land leases and associated development rights above and adjacent to the stations. The MRTC divides the large government leased parcels into smaller parcels that are offered to private sector developers within a competitive bidding process. The prices reflect the increased value due to the transit station. The MRTC is one of the few places in the world where a transit agency makes a profit. The profit largely comes from the success of real estate development that is realized as a result of the accessibility that comes with the provision of transit.

Hong Kong High-Speed Rail Terminus, north of the proposed West Kowloon Cultural District [Due for completion 2015]

Source: http://factspod.blogspot.co.uk/2012/11/express-rail-link-hong-kong.html

Japan Railway Construction Public Corporation (JRCC)

Tokyo's railway companies rely on land value capture models as a means of funding transit and generating profit. The approach is different to Hong Kong because they have not just built individual buildings but new towns on green field sites. Due to the economic downturn they have developed new revenue streams and approaches such as strategic partnerships and strategic infill development, such as urban shopping center development above and integrated with urban rail terminus stations. The JRCC is involved with rail projects that improved the urban environment at the same time. They also use a land readjustment method that sets aside land for the railway by substituting land acquired in advance by municipalities in an integrated development area.

Tokyo Metro, Kanto Region area

Source: http://www.railway-technology.com/projects/tokyo-metro-kanto-japan/tokyo-metro-kanto-japan3.html

Transgesco, Montreal

In 2004, the City of Montreal created Transgesco, a wholly owned subsidiary company that enables the transit corporation to form partnerships with private sector companies to ensure the strategic development of its full commercial potential. Five areas of activity had commercial potential – retail outlets around stations, transit user information, smart cards, wireless communications and marketing of STM expertise. In 2006, Transgesco formed two subsidiary companies – Metrocom S.E.C. to secure the rental, management and development of commercial areas in the metro system, and Metrovision S.E.C. to install a digital display network in metro stations. The various partnerships generated $3.3 million profits in 2006.

Windsor Station, Montreal

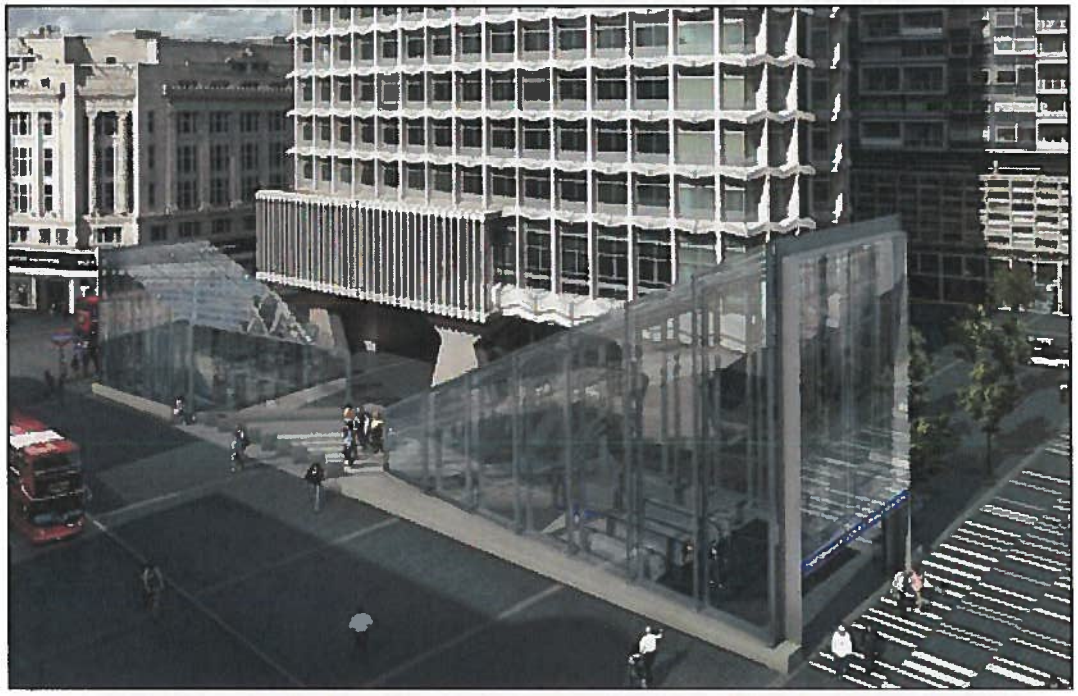
Source: http://www.flickr.com/photos/nino_ary/8481482453/

Montreal Downtown

Source: http://wallstreetmeeting.de/mos-2008/preview-aug-08-montreal-canada/

Crossrail, London

This project is a good example of collaboration between the public and private sectors and a combination of development-based and taxation-based LVC funding. Crossrail realized between 3-5% of the £15B cost from joint ventures at stations, direct contributions and excess land sales post-construction. The project promoted TOD development, bringing in extra value from the private sector. They were able to demonstrate risk transfer to the private sector and also show the community that those who gained also contributed to the cost. For example, at Woolwich Station Berkeley Homes contributed £100 million. The joint venture produced a strong business case that showed that Crossrail helped create a competitive city, brought relief to other transit lines and brought 1.5 million people within 45 minutes of central London. There were also wider economic benefits defined.

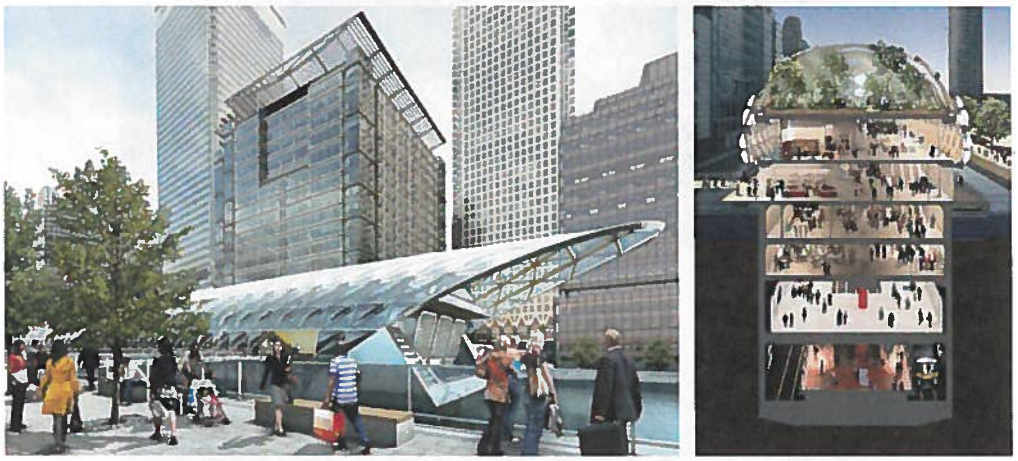


Tottenham Court Road Station, part of Crossrail development Project

Source: http://news.bbc.co.uk/1/hi/in_pictures/7830869.stm

Canary Wharf Station, London

In the Docklands, London the private sector and not-for-profit business advocacy sectors have worked with the public sector to create discussion, tension, and collaboration that has generated rigorous business case development, accountability, and the delivery of successful transit projects in the city. In some cases, transportation projects and plans have been adjusted in response to private sector experience and expertise and significant public and private value has been created. For example, the Canary Wharf Group, the development and management company responsible for the Canary Wharf Estate, has directly engaged and funded consultants to research, plan and act as advocates for three generations of rapid transit, including Docklands Light Railway, the Jubilee Line Extension, and Crossrail. Canary Wharf Group made their own contributions to the rapid transit projects, including financial contributions and the assumption of risk. The Canary Wharf Group has collaborated with London First, a business coalition for policy and development and advocacy whose mission is to make London the best place in the world to do business. This was done to strengthen the business case through support from the private sector, and led to new taxes on development and businesses to pay for transit.



Canary Wharf station, Docklands, London

Source: http://urbandesign.tfl.gov.uk/Design-Guidance/London-Rail/Crossrail/Station-Type/Within-development.aspx

Hudson Yards, New York

The Hudson Yards is a 360 acre comprehensive proposal to realize the development potential of Manhattan's Far West Side. The project is currently in the initial stages of construction. The project includes extending the subway service, establishing a new open space network, zoning for appropriate densities and mixed-use, and creating a convention corridor. The financing plan involves capturing the incremental revenues from new commercial and residential development in the area to cover debt service on bonds that will be issued by the Hudson Yards Infrastructure Corporation (HYIC), a special purpose local development corporation. In effect, Hudson Yards is driving, through very significant contributions, the extension of the number 7 subway in New York City.

Hudson Yards Urban Regeneration Project, Manhattan, New York

Source: http://luxuryrentalsmanhattan.com/blog-tags/hudson-yards-development-project

TransLink, Vancouver

In March 2008, Translink launched a real estate division and plans to develop property as a way to generate funds for transit. Under the plan, Translink will purchase land along new transit routes and around stations and increase the value through intensification of land use zoning and partnerships with developers to create high-density commercial and residential developments. Estimates of the revenue stream are around $30 million per year, over 5 years. It is interesting to note that after the opening of the SkyTrain in 1985, developers zoned in on the areas around the stations. A total of 7,870 houses were built within a 500m radius of stations between 1986 and 1996. In addition, commercial towers rose up around the stations. The uplift in value was not realized at that time but TransLink is now planning four transit villages to augment existing hubs creating attractive, compact, mixed-use communities centered around the transit stations.

Source: http://www.ubcm.ca/EN/main/funding/gas-tax-fund/tier-3-strategic-priorities-fund.htmlv

SkyTrain, Surrey, Vancouver

Source: http://forum.skyscraperpage.com/showthread.php?p=5375619

Washington Metropolitan Area Transit Authority (WMATA)

The WMATA's joint development program began in the 1970's and became known for its in-house real estate expertise, profitable deals, and innovative deal structures. The program is delivered through property owned and/or controlled by the WMATA that is marketed to commercial and residential private developers with the objective of developing transit-oriented projects. Until the mid 2000's, the WMATA proactively purchased land adjacent to stations for joint development projects. The average annual gross revenue from their activities was more than $6 million. In 2008, the WMATA adopted revised joint development policies that improved responsiveness to development opportunities and market conditions, promoting more cooperation between local planners and focusing on the long-term benefits of TOD.

Prince George's Plaza Metrorail, WMATA

Source: http://ww2.gazette.net/stories/100507/businew40042_32360.shtml

Portland Oregon, MAX extension

In 1999, a joint development proposal was brought forward to fund a $125 million extension of Portland's light rail system, MAX, to the airport. The stakeholders included the Port of Portland, the City of Portland, the Portland Development Commission, Tri-Met (the transit agency), and a private development company, Cascade Station Development Company. The private investors agreed to take responsibility for repayment of the $28.2 million in bonds and in return they received an 85 year ground lease on 120 acres that included 2 of the 4 planned stations. The remainder of the funding came from the Port of Portland ($28.3 million), the Tri-Met general fund ($45.5 million) and the City of Portland ($23.0 million from an urban renewal fund and TIF). Significant growth has occurred around Cascade Station since 2005.

The MAX light rail, part of Portland's TriMet mass transit network

Source: http://findingfukuoka.com/2011/12/19/new-public-transit/

Portland, Oregon Streetcar

The streetcar in Portland Oregon was funded by a Special Assessment District, Oregon Lottery-backed bonds, the Federal government, and advertising on the vehicles and stops. Two Local Improvement Districts (LIDs) were established to serve the Pearl District, a previously vacant, low-density neighborhood. The one-off levy from the LIDs combined with development and density increases raised 17% of the $56 million required. The streetcar and the new intensified zoning transformed the area into one of the most in-demand real estate markets in the city.

Portland – Portland Oregon streetcar

Source: http://www.stamfordadvocate.com/news/article/Stamford-light-rail-study-reviewed-by-city-363301.php

Columbia Valorisation Tax

Public works in Columbia are funded by valorization taxes. This tax takes the form of an up-front tax that theoretically recovers the uplift in value resulting from direct public investments. The tax is based on a valuation of the properties before and after the works are undertaken and the rate is calculated using "benefit factors" based on land use classes. Over 50% of the main highway network in Bogota was funded using this method.

Bogota, Columbia

Source: http://globalgastros.com/2013/is-it-safe-to-travel-to/

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Info@vtpi.org
250-360-1560

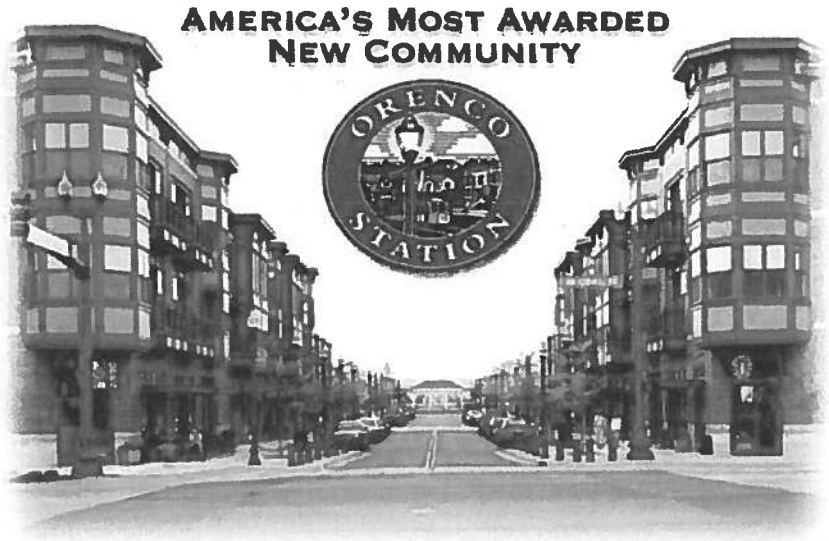
Financing Transit Systems Through Value Capture

An Annotated Bibliography

17 April 2015

By
Jeffery J. Smith and Thomas A. Gihring

with
Todd Litman
Victoria Transport Policy Institute



Orenco Station in Portland, Oregon is a successful Transit Oriented Development. Property values tend to increase in such areas reflecting their improved accessibility and transportation cost savings.

Abstract

This paper summarizes the findings of more than 100 studies concerning the impacts transit service has on nearby property values, and the feasibility of capturing a portion of the incremental value to finance transit improvements. The results indicate that proximity to transit often increases property values enough to offset some or all of transit system capital costs.

A shorter version of this paper was published as,
"Financing Transit Systems Through Value Capture: An Annotated Bibliography"
American Journal of Economics and Sociology, Volume 65, Issue 3, July 2006, p. 751.

Contents

Introduction

Experts generally offer three bits of advice to people shopping for a home or business: *location, location, location.* Why is location so important? Various factors come into play. People generally don't want to live near a noisy factory, hazardous waste site or other locally undesirable land use (LULU). Some neighborhoods are considered safer or more prestigious. Another important factor is *accessibility*, that is, the ease with which people can reach services, activities and other important destinations. Home buyers want to know that the house they purchase is located within reasonable travel time to shops, services and worksites. Similarly, business managers want a location that is easy for customers and employees to reach.

A particular location's accessibility is affected by both its proximity to people and activities, and by the quality of transportation serving it. In rural and suburban areas this depends primarily on automobile travel conditions, so locations along a major roadway, or even better, at the intersection of two major highways, is considered optimal. This is why businesses tend to line highways, and suburban home advertisements often claim "Just 20 minutes from town!"

In urban areas, transit access can also be important. By its nature, transit accessibility is more concentrated. Transit users generally walk a few blocks from their origin to a stop or station, ride a bus or train, and then walk a few more blocks to their destination. Transit riders generally don't want to walk more than a quarter mile. As a result, locations within a quarter mile radius of a transit line or station are considered to have better access than in other areas, providing benefits to residents and businesses due to reduced transportation costs and access to a larger pool of potential services, jobs, customers and employees.

For example, people may recognize that by locating near a busway or transit station they can commute by transit and avoid the cost of a second car. Quality transit service can leverage additional economic benefits. Transit-oriented communities tend to have better walking conditions and more clustered commercial activities than communities that are more automobile-dependent, and they often have lower parking requirements that provide additional consumer savings. Several studies indicate that residents of multi-modal neighborhoods spend significantly less in total on transportation than residents of automobile dependent communities (McCann, 2000; Litman, 2004). Quality transit service can also reduce the burden of chauffeuring non-drivers, and insuring that people will have adequate access if for any reason they cannot drive, for example due to a physical disability or poverty.

Similarly, many businesses want to locate near bus routes and transit stations to attract employees and customers, and to reduce their parking costs. All else being equal, convenient transit service increases an employers' potential employment pool, and many types of retail businesses want to take advantage of the concentrated pedestrian traffic around transit stations.

Of course, as with any infrastructure project – be it a transit system, a public park, a highway or a school – there may be negative impacts that reduce the location value for some people. Some people move away from highways to escape the noise and smog, and some people move away from playgrounds to escape the shrill voices of kids at play. But for the market overall, positive impacts tend to outweigh the negative impacts, increasing overall property values.

The value of accessibility has been well studied by the disciplines of urban economics, land economics and urban planning. In general, the more accessible a location, the higher its property values (Vadali 2014). For many years these experts assumed that transit accessibility was being displaced in importance by automobile accessibility, but in recent years there has been increasing recognition of the demand for high quality public transit and therefore the potential increase in value of properties located near high quality public transit services (Litman, 2002). Proximity to transit can affect property values in three somewhat different ways, one negative and two positive.

1. Being located very close to a transit station or along a transit line can have negative impacts, including noise and air pollution from trains, and increased local vehicle traffic from transit passengers. These nuisance effects may reduce property values very close to stations or lines.
2. It gives one location a relative advantage over other locations, attracting residential and commercial development that would otherwise occur elsewhere in the region. This is an economic transfer.
3. transit can also increase overall productivity by reducing total transportation costs (including costs to consumers, businesses and governments of for vehicles, parking and roads) and providing a catalyst for more clustered development patterns that provide economies of agglomeration, which can reduce the costs of providing public services and increase productivity due to improved accessibility and network effects (Coffey and Shearmur, 1997). Although these productivity benefits are difficult to quantify, they can be large: just a few percentage increase in property values, a few percentage reduction in automobile and parking costs, or few percentage increase in business productivity in a community can total hundreds of millions of dollars.

Increased value to locations near transit reflects the direct benefits to residents and businesses of locating near high quality transit; this usually reflects just a portion of total benefits since there are often additional indirect economic, social and environmental benefits to people located further away.

Proximity to transit tends to be particularly important for:

- Retail businesses that serve transit riders.
- Employment centers that attract many commuters, such as offices, medical centers and educational facilities.
- Recreational and entertainment activities that attract large crowds.
- Residents who cannot drive, or prefer to use alternatives.

These potential economic benefits from improved transit services raise intriguing prospects. Is it feasible that public transit systems could be partly funded by capturing a portion of the increased property values? This is consistent with the concept of *land value taxation* promoted by Henry George (Lincoln Institute). Many planners and economists, including Nobel laureate William Vickrey, suggests that cities could benefit by funding transit system development costs and a major portion of operating costs from land value capture, that is, by taxing a portion of the additional value of adjacent properties that result from transit accessibility.

A number of published studies have investigated the concept of value capture to fund transit. Most researchers examining these value affects limit their data to properties within transit corridors (i.e., within about 500 meters of a transit stop or station, that is, the distance that people are typically willing to walk). Tideman and Borhart both maintain that this perspective underestimates the full impact. A greater capital improvements revenue base would be available to transit agencies if rising land values within an entire region were appropriated through a general land-based property tax.

There are many examples of potential or successful land value capture to fund transit. R. T. Meakin notes that Hong Kong's rail transit system receives no subsidy, all costs, including interest on bond indebtedness, are paid from land rents derived from development in station areas. W. Rybeck estimated the added land values sequential to the development of Washington D.C.'s Metro, and found a surplus of incremental value. D. Riley, who studied the London tube extension, also found that surplus values were generated.

In recent years there has been growing support for *Transit Oriented Development* (TOD, a component of *New Urbanism* and *Smart Growth*), which results when a transit station provides a catalyst for mixed-use, walkable land use patterns, sometimes called an *urban village*. It tends to increase property values, reflecting the direct benefits to residents and businesses of having diverse transportation options, and resulting automobile and parking cost savings. Transit oriented location is similar to waterfront property, it is a valuable and scarce resource. Of course, not every transit improvement provides significant land value increases. Only if there is demand for proximity to transit are substantial increases in property values likely to occur.

A number of factors can support this type of development, including supportive land use development policies, overall transit service improvements, and other mobility management strategies, all of which can work together to make transit oriented development and transit use more attractive to consumers and businesses, and more cost effective ("Transit Oriented Development," VTPI, 2004).

A substantial portion of the capital costs associated with constructing public transit facilities is land acquisition. This cost could be effectively reduced if ground rents were collected. That is, when the public sector captures incremental land values through the general property tax and through special levies on land holdings in transit corridors, less value remains for private owners to capitalize into price. This dampening of land prices helps to reduce land acquisition costs.

Other possible revenue sources include joint-development, and the leasing of sites near stations. Localities can adopt other forms of "green" taxation such as congestion pricing and vehicle emission permit fees to help fund transit systems. For example, London recently introduced a congestion charge for driving downtown, and many cities use parking revenue to help fund local transportation services.

In the past, private developers often built transit systems to urban fringe neighborhoods and recouped the capital costs from the sales of developed sites (still common practice in Japan). Such profits from land residuals are commonplace in the private sector, but could reasonably be

extended to the public domain – where local government covers the financial risk and the cost of building transit systems. Cervero, et. al. (2004) state that a central element of joint-development amounts to a *quid pro quo*, whereby private developers' benefits from transit accessibility are capitalized into higher rents and occupancy rates, and transit agencies' capital funding is enhanced through cost sharing mechanisms.

To date, most studies of value capture financing for transit focus on U.S. cities, where low density development and auto-dependency predominate. Studies have begun to emerge from developing countries, where denser cities and a more even modal split can be found (Cervero & Susantono, Gutman, Nakagawa & Matsunaka, Prest, and Tsukada). Some of these authors have noted that while progressive legislation may be on the books, the practical means of capturing site values for transit projects is hampered by inadequate land registration records and lagging assessments.

Previous summaries and bibliographies of transit financing through value capture have been compiled by the U.S. Subcommittee on the City (1980), Pickett & Perrett (1984), Huang (1994), the Transportation Research Board (1998), Diaz (1999), Lewis & Williams (1999), NEORail II (2001), Jonathan Hack (2002), TRB 2010 and Vadili 2014. The following is an annotated list of studies that the authors recommend as worthy reading.

Financing Public Transportation

1) Wayne Boyle (1993), "Eight Ways to Finance Transit: A Policymaker's Guide," Item # 9362, *National Conference of State Legislatures.*
The Los Angeles Metro Rail Special Benefit Assessment District survived a challenge in court, and contributed $130 million per year to the cost of retiring LA Metro bonds.

2) M. Buchanan (1988), *Urban Transport and Market Forces In Britain*, Anglo-German Foundation for Study Industrial Society, London. Available from: AGFSIS, 17 Bloomsbury Square, London, England, pp 211-219.
The report features sections on buses, trains, and roads. The application of market forces and competition may decrease the public cost of transport and decrease traffic congestion in the U.K. Thus far, policies addressing market forces have been confined largely to bus service where deregulation has produced little change in service levels. Although public savings have been realized in large urban areas, the tendering process has led to major increases in county council costs and public transport staff. Market forces have not been effectuated in the railway system in the same way; large subsidies are still required. Tighter financial targets, the disposal of surplus land, and the subcontracting of work have all been undertaken, as have improvements in administration. Construction of new railways is being funded in part by the consequent increase in land values, an example being the London docklands railway. Four methods are discussed: allocating the subsidy to specific purposes; paying the subsidy via a third party; separating the operation of railways from the provision and maintenance of infrastructure; and privatization. Methods to commercialize road infrastructure include: urban parking management, the financing of new highway construction from tolls, and road pricing. (From Transport and Road Research Laboratory in TRIS Database under "Taxing Property Values for Transit")

3) Matthew Doherty (2004), *Funding Public Transport Development Through Land Value Capture Programs*, EcoTransit (www.ecotransit.org.au).
This paper examines the potential to raise capital for funding public transport development through the use of land value capture programs. A literature review of studies that examine examples from Australia and abroad has been undertaken to do this. Among the mechanisms considered are development land taxes, systems of property rating, taxation models and specialised loans. These are considered alongside other funding measures such as statutory charges, CBD parking levies, business rate supplements and recent international methods of congestion charging.

4) Thomas A. Gihring (2001), "Applying Value Capture in the Seattle Region," *Journal of Planning Practice & Research, Vol. 16, Nos. 3-4 (Winter): 307-320.*
The "geo-bond" financing mechanism features the capture of land rent as distinct from other capture devices that may include the building component of assessed value. Using the Broadway station area of Sound Transit's proposed LINK light rail line, the author employs a model simulating the tax effects of (i) a general land value property tax and (ii) a land value gains tax

within the transit benefit district itself. The LVT produces the desired development incentive effects, as it shifts the burden off buildings in this "main street" setting. The gains tax targets the difference between the annual assessed land value increase and the revenue derived from the general property tax within the half-mile radius benefit district. Given the rapid rises in values in recent years, "a land value gains tax combined with a hypothecated general LVT can raise as much as $118 million to support the necessary transit improvements. At a minimum, about $24 million could be raised from an incremental gains tax alone." Sound Transit estimates station and street improvements (excluding right-of-way acquisition) construction costs at $80 million.

5) Donald G. Hagman and Dean J. Misczynski, eds. (1978), *Windfalls for wipeouts: land value capture and compensation.* American Society of Planning Officials. (Funded by U.S. Dept. of HUD).
Special Assessment Districts (SAD) by local governments, once used extensively, fell out of favor during the Great Depression. Yet by the 1970s, the tool was making a comeback. In 1913, Los Angeles, Oakland, Portland, and Kansas City raised 20% of their budgets from SADs. When the Depression wiped out land value, civic bonds became difficult to pay off and lost their ratings. Then, by 1972, the cities over 100,000 population that had SADs in effect (about 5% of all local jurisdictions), funded an aggregate 12% of their budgets through this method. With regard to the use of the Land Value Tax (LVT), the editors questioned the effectiveness of Pittsburgh's experience in shifting the property tax rate from buildings to locations, citing a 1973 Price Waterhouse study (written before the rate differential was increase to 6:1, land to improvements). Nevertheless, the solid results from using the LVT for developing Waikiki Beach, Hawaii were also noted.

6) Yoshitsugu Hayashi (1989), "Issues in Financing Urban Rail Transit Projects and Value Captures," *Transportation Research. Part A: General, Vol. 23A, Issue 1 (January).*
In Japan, urban rail transit projects are suffering from cost burden due to the current financing system's dependence on borrowed money from loans and bonds that are repaid mainly by fares. The transit fund cannot bear increased expenditures from accelerated construction demand and the rising cost of land acquisition. This paper reexamines the financing system and analyses the possible means of raising revenues. From the viewpoint of the benefits principle, the author examines the imbalance between those who bear the costs and those who receive the benefits, using Japanese examples.

7) Martin Higginson (1999), "Alternative sources of funding," *Public Transport International, Vol. 48, No. 5 (September).*
The author cites several transit systems. Copenhagen, Denmark, is funding a line to a new suburb by selling off public land for the development, privatizing development, and collecting more property tax revenue from the higher ensuing land values.

8) Jane A. Howard (1984-85), *Strategies to Implement Benefit-Sharing for Fixed-Transit Facilities.* Series Report from Transportation Research Board, National Research Council, National Cooperative Transit Research & Development Program No. 12.
A Local Improvement District is a special property assessment to pay for capital improvements benefiting a defined area. In Portland, Oregon, it is designed to collect some site rent (attributed increases in land values) to fund transit-related improvements such as street paving, streetscape amenities, and trolleys. In a required-by-law election, affected downtown owners unanimously approved the LID, and are assessed by square footage of land (excluding buildings), with greater weight given to frontage within 100 feet of transitways. The LID is paying off $1.5 million in bonds over 20 years, comprising over a quarter of the $5.5 million total project cost.

9) M. Ito (1989), *Establishing New Measures to Construct New Railroad Lines,* JTERC Reports, Vol. 11, Japan Transport Economics Research Centre, Tokyo, Japan.
This study examines the New Joban railway line in the northeastern area of Tokyo. It estimates land values of properties along the corridor, with and without the rail line, and calculates the resulting increment. Methods of ensuring that a region receives an adequate return on its investment are discussed. Included are (i) local taxes for a Railroad Construction Fund; and (ii) reduction of station construction costs, either by setting up a trust company to construct a combination of station retail outlets, or by making the developer or local companies responsible for some of the costs. For rural areas, the author recommends a system of integrated development, ensuring that development of residential, educational and cultural facilities along the line keep pace with rail construction. Also included are suggested methods by which problems of acquiring railway land can be overcome. (See IRRD 857359 in Transport Research Laboratory on TRIS Database, "Taxing Property Values for Transit")

10) T. M. Ridley and J. Fawkner (1987), *Benefit Sharing: the Funding of Urban Transport through Contributions from External Beneficiaries*, Report from the 47th Congress, International Union of Public Transport, Lausanne.
"Specific improvement assessments" funded the first 35 km of Milan, Italy's Metro. The special levy is assessed on properties within 500 m of stations. This form of LID had raised 36 billion lire, but following its initial success the levy was replaced by a real estate transfer tax that feeds into the local general fund.

11) Rick Rybeck (2004), "Using Value Capture To Finance Infrastructure And Encourage Compact Development," *Public Works Management & Policy* (http://pwm.sagepub.com), April, pp. 249-260; at www.mwcog.org/uploads/committee-documents/k15fVl1f20080424150651.pdf.
This article discusses the theory and practice of value capture. It describes how transportation investments often increase nearby land values, including a review of empirical studies of this effect. This increased value can choke off urban development, pushing new growth to cheaper sites remote from these investments. This "leapfrog" development creates a demand for infrastructure extension that starts the process over again. Transportation infrastructure, intended to facilitate development, thus chases it away. The resulting sprawl strains transportation, fiscal,

and environmental systems. Several jurisdictions around the country utilize a value-capture technique embedded in their property tax to help finance infrastructure and motivate affordable compact development. They reduce the tax rate on assessed building values and increase the tax rate on assessed land values. The resulting compact development should facilitate better transportation and accommodate economic growth with reduced fiscal and environmental costs. This technique's ability to foster affordable compact development might help bridge the gap between those who advocate growth boundaries and those who fear the impact of growth boundaries on affordable housing. The author is an attorney with a master's degree in real estate and urban development, has served as the Deputy Administrator for Transportation Policy and Planning within the District of Columbia Department of Transportation since 1997.

12) Philip J. Shinbein and Jeffrey L. Adler (1995), "Land Use and Rail Transit," ***Transportation Quarterly, Vol. 49, No. 3, pp. 83-92.***
Using a case study of Orange County, New York, the authors state the case for shifting transit subsidies from the present system of general taxes to land value taxes, arguing that it is realistic to think of self-financing transit improvements from LVT. Joint development programs coupled with permissive zoning to encourage high density "pocket communities" near transit stations would increase land values that can be recaptured to pay for the capital costs of rail infrastructure.

13) James G. Strathman and Kenneth J. Dueker (1987), ***Regional economic impacts of local transit financing alternatives: input-output results for Portland*****, Portland State University, Center for Urban Studies.**
This study ranks several taxing methods for funding transit. The one found to distort economic activity the least is the gasoline tax, followed by the property tax. The least desirable method of raising revenues is a higher onboard fare, followed by a payroll tax. Taxes on income, parking, and sales produce moderate distortion effects.

14) E. Walther, L.A. Hoel, L. J. Pignataro and A.K. Bladikas (1990), ***Value Capture Techniques in Transportation: Final Report, Phase One,*** **Report No. DOT-T-90-11, Office of the Secretary of Transportation.**
The authors provide an overview of the potential use of value capture techniques. Included is a general set of criteria for state and local officials to evaluate the applicability of value capture to specific funding situations. A series of techniques in communities of various sizes is provided, along with a decision support methodology based on a set of 63 indicators to evaluate specific value capture proposals. Techniques include: special assessment districts, donations, negotiated investments, public / private partnerships.

Prospects for Cost Recovery

15) Allen, W. Bruce (1987), "Value Capture in Transit," *Journal of the Transportation Research Forum, Vol. 28, no. 1.*
This case study in south metropolitan Philadelphia offers an interdependent set of models of modal choice, station choice, and travel savings using the economic law of market areas. These models (i) spatially separate auto users from transit users, (ii) spatially separate the users of station A from the users of station B, and (iii) spatially connect the locii of all points where the user saves an equal amount of money from using transit over auto. All of these models yield hyperbolas that bend around the stations on the line. The station choice model is tested using auto access data for all suburban stations of the line for a morning rush hour (13,000 observations), and assumes the station chosen most often from any given location is the preferred station. The savings model is tested by postulating that residential sales price is a function of the characteristics of the property, the neighborhood, distance from the CBD, and savings (using over 1,300 real estate transactions from 1980). Each dollar of daily savings is found to add $443 to the value of the property. If rents fell elsewhere, such loss was not deducted. The benefit to non-transit census tracts (less congestion and shorter travel times) was not added in; if it were added, savings would be 30% higher. Without it, $4,581 could be captured per single family home. Within the transit census tracts, this adds up to $279.5 million, or 117.9% of the construction cost of the Lindenwold Line, the right-of-way of which did not need to be purchased. Buying the land and constructing bridges would have raised the cost to $820 million, of which captured land rent could have paid one-third (unless all rent were captured, which would drop land's price to zero). In order that the costs are borne by the beneficiaries, land value should be captured at the time it is created, that is, between the announcement of a new improvement and its actual opening.

16) Mezyad Alterkawi (1991), "Land Economic Impact of Fixed Guideway Rapid Transit Systems on Urban Development in Selected Metropolitan Areas: The Issue of the Price-Distance Gradients." Ph. D. thesis, Texas A&M University, Stock No: 91-33904 University Microfilms International.
This study concentrated on Washington, DC and Atlanta, GA. It also noted that Toronto, Canada's Yonge Street Subway increased property tax revenue by $5 million annually, while the annual cost of servicing the subway's bonds was $4 million.

17) Alex Anas (1983), *The Effects of Transportation on the Tax Base and Development of Cities*, Report for the U.S. Dept. of Transportation.
Transportation improvements and investments change zone-to-zone travel times and costs. This researcher's model forecasts changes in land values. The forecasts are determined annually and by small geographic zones in a metropolitan area. The Chicago application shows that under 1970 conditions, capitalized land value changes are nearly 36-40% of the capital cost of rail rapid transit proposals then proposed for Chicago's southwest side. Similar calculations for bus systems appear more promising. Anas suggests a one-time lump sum property assessment rather

than an increase in the land tax rate, since that latter would lower "site values". This would lower selling price, while the value remains the same (what buyers are willing to pay: price plus tax).

18) H. William Batt (2001), "Value Capture as a Policy Tool in Transportation Economics: An Exploration in Public Finance in the Tradition of Henry George", *The American Journal of Economics and Sociology*, Vol. 60, No. 1, pp. 195-228.
This study shows how value capture could have been used to finance a 9-mile portion of the New York State interstate highway system. The added increment of land value attributed to the Northway sector amounted to 11 times that of the cost of right-of-way acquisition, road and bridge construction. Batt concludes that the windfall gains in land value that fell to private landowners could easily have paid off the bonds issued to build the project. Furthermore, the added taxes from value capture assessments in the highway corridor removes the invitation to land holders to speculate on their sites. Directing some of the gains to mass transit also indirectly compensates for the cost of smog and other pollutants emitted from cars.

19) Jonathan Hack (2002), *Regeneration and Spatial Development: a Review of Research and Current Practice*, IBI Group, Toronto.
This paper provides specific examples of how, and to what degree, urban transit investment (principally light rail) has stimulated urban regeneration and created private opportunities for private sector investment in transit corridors, notably around transit stations. The case studies provided are derived from a review of research to date that showcases recent examples of LRT investment in Europe and North America.

European cities:

1.Tyne & Wear Metro, Newcastle, U.K.: 55 km./44 stations:
- House prices increased 2% within 200 meters of metro stations.
- Retail activity or office developments near stations does not appear to be directly linked to LRT.

2. Manchester Metrolink (LRT completed 1992):
- Development of 20 500 sq.m of offices and services in City centre.
- Yet, no evidence of urban development outside City centre.

3. London Docklands Light Railway: open 1987, 13 km./16 stations; Beckton & Lewistan extensions totalled 50 km and cost 424 million pounds:
- A priori assessment proved correct: 50% of capital cost was recaptured through transport costs reduction, reduction in congestion and in accident, while 50% was recaptured through overall office development and job creation.

4. Croydon Tramlink, South-London (opened May 2000, 28 km. Croydon to Wimbledon/38 stations):
- Economic impact yet to be felt.

5. LRT in Strasbourg, France (built 1991-94):
- Between 1994 and 1995, park-and-ride schemes near the city centre resulted in an increase of 100% of transit system users and draw shoppers from outside the metropolitan area.
- Pedestrianization around adjacent Place Kleber helped create larger and more accessible activities.

6. Helsinki Metro, Finland (1982):

- Property within walking distance of railway or metro station worth 7.5% more than other locations.
- Impact was most significant at a distance of 500-750 m., as opposed to adjacent locations, where values dropped.
- In the best locations, dwelling prices raised by 11%.

7. Vienna S-Bahn, Austria (opened 1962, 14 km.):
   - Districts located along S-Bahn corridor have witnessed increases in number of new housing units of 18,7% over 10 yr. period, as opposed to 4% and 10% in more remote locations.

8. Nantes, France:
   - Between 1985 and 1995, 25% of new offices, 13% of new commercial premises and 25% of new residential dwellings were built adjacent to LRT.

North American Experience:

9. Baltimore Central Light rail, USA (first segment 1992, 29 miles):
   - While useful from a transit standpoint, Baltimore LRT system failed to spur retail activity in downtown area.

10. Portland Metropolitan Express (started in 1986, 15 miles/32 stations, plus plans for 18 miles expansion):
   - Since 1986, $1,9 billion in property development in the immediate vicinity of line.

11. St-Louis, Missouri (opened 1993, 18 miles/18 stations):
   - To date, development spurred by transit system totals $530 millions and includes major projects.
   - A $1,5 billion expansion to LRT is expected to have a $2,3 billion impact on business sales.

12. San Diego Trolley, California, a LRT which connects downtown area to Tijuana, Mexico (40 miles/34 stations):
   - Since construction, some 4 million sq. feet of Class A office space has been added to downtown area, with population growing from 0 to 20 000 persons.

13. Metro Toronto Subway (built during 1950s & 1960s):
   - Between 1959-1964: 90% of all new office spaces and 40% of apartment buildings in Toronto took place along the metro lines.
   - Tax assessment values near City centre stations rose by 45% and by 107% around suburban stations, as opposed to 25% elsewhere.
   - Office space rents adjacent to the stations average 30% more than average for the City as a whole, while office rents within 500 m. of stations rose by 10% more than average.

14. Chicago LRT:
   - Chicago Transit Authority estimates that maintaining a "good repair" scenario in its transit system would yield $4,6 billion in additional business sales, 41 209 jobs over 20 years and annual tax revenues of $154 million.
   - Chicago authority projected that return on capital investment in LRT was $6 for every $1 spent.

15. Dallas Area Rapid Transit (DART):
   - Property values near the DART lines are 25% higher than similar real estate elsewhere in the area.

16. Other cities:

- In Atlanta and Washington DC., real estate developments around transit stations command a premium of between $3 and $4 per sq. foot.

20) Todd Litman (2004), *Rail Transit In America: Comprehensive Evaluation of Benefits*, Victoria Transport Policy Institute (www.vtpi.org). Also see, *Evaluating Public Transit Benefits and Costs*, by the same author and publisher, which provides additional information on methods for evaluating benefits.
This study evaluates rail transit benefits based on a comprehensive analysis of transportation system performance in major U.S. cities. It finds that cities with large, well-established rail systems have significantly higher per capita transit ridership, lower average per capita vehicle ownership and annual mileage, less traffic congestion, lower traffic death rates, lower consumer expenditures on transportation, and higher transit service cost recovery than otherwise comparable cities with less or no rail transit service. It finds that monetized benefits exceed rail transit costs several times over. This indicates that rail transit systems provide economic, social and environmental benefits, and these benefits tend to increase as a system expands and matures. This report discusses best practices for evaluating transit benefits. It examines criticisms of rail transit investments, finding that many are based on inaccurate analysis.

21) Lewis, David, and Fred L. Williams (1999), *Policy and Planning as Public Choice: Mass Transit in the United States,* Ashgate.
This book examines various economic benefits from public transit, including improved mobility, reduced congestion and increases in nearby property values. They conclude that, "The public realizes $5 in cash savings for each tax dollar invested in transit services." On page 141, they display a chart that clearly correlates transportation mobility with national wealth (and elsewhere with household wealth).

22) D. Nakagawa and R. Matsunaka (1997), *Funding Transport Systems: A Comparison Among Developed Countries*, Pergamon.
The authors repeat the findings of Tsukada and Kuranami (below) that in Japan private railroads manage real estate within rail corridors, and thereby enhance profits.

23) Phyllis J. Nathanson and Gary Booher (1983), *Survey of Joint Development and Value Capture Activity in Selected Metropolitan Areas,* City of Los Angeles Planning Dept.
Among several systems noted in this survey, Miami's Metrorail raised enough site rent to cover 25% of its total capital cost ($116 million).

24) Don Riley (2001), *Taken for a Ride: Trains, Taxpayers, and the Treasury,* Centre for Land Policy Studies, U.K.
London's Jubilee extension cost £3.5 billion, and raised the nearby land's rental value by £1.3 billion. Public collection of 25% of that increase would pay off the Jubilee in 20 years. In the vicinity of Edinburgh, Scotland, developers are co-funding a new line on an old right-of-way.

25) Walter Rybeck (1981), *Transit-Induced Land Values: Development and Revenue Implications*, Report published in Commentary, Council on Urban Economic Development, 24 October 1981, pp 23-27.
In his report to Congress, this former staff to Sen. Paul Douglas noted that Washington, DC's Metro in 1981, after some $3 billion in expenditures, was 40% complete and had generated over $2 billion in land value. In January 2001, after $9.5 billion in expenditures, the completed system had generated between $10 and $15 billion in new land value.

26) Nicolaus Tideman (1993), "Integrating Rent and Demand Revelation in the Evaluation and Financing of Services," In *Does Economic Space Matter?*, eds. Hiroshi Ohta and Thisse Jacques-Francois (London: Macmillan) 133-150.
Taking into account more than just the property selling price, this researcher considers how a transportation project changes the returns to land, labor and capital, compared to the project's costs: 1) the increase in privately collected rent – i.e., the increase in the selling price (and lease value) of land; 2) the increase in taxes on land; 3) the decrease (more usual than an increase) in its value, because capital can't be moved (as land rose in value but building fell in value); 4) the change in taxes on existing buildings; 5) the taxes on new buildings erected in response to the transportation improvements; 6) the cost of extra public services for the added buildings (unless there are user fees); 7) the extra tax revenue if there's a sales tax or a wage tax which reduces land values; 8) the savings in travel time if low fares reduce congestion; 9) reduced smog; and 10) the loss of human happiness from uncompensated personal adjustment to the change in the built environment. The sum of these 10 items is compared to the transportation system costs.

27) Transportation Research Board, Price Waterhouse & Co. (1998), *Funding Strategies for Public Transportation.* TRB Report 31, Transit Cooperative Research Program, 1998.
Precise location in the transit facility-property value relationship is found to be crucial. In one New York station, moving a concession stand a mere 20 feet doubled the rent the transit system collected from the vendor.

28) United States Congress: House Committee on Banking, Finance, and Urban Affairs, Subcommittee on the City (1998), *New urban rail transit: how can its development and growth-shaping potential be realized?*, U.S. Government Printing Office.
From page 81: Burkhardt and Howard summarize historical evidence. "Major land value increases occurred in many station areas of New York City's expanding transit system in the early 1900s." From page 124: Donald Richmond states, "The (Toronto Transit) Commission … experience…suggests that the long-term land-leasing program can completely recover land acquisition costs over a reasonable time period."

Effects of Transit Facilities on Property Values

29) A. Anas and Regina Armstrong (1993), *Land Values and Transit Access: Modeling the Relationship in the New York Metropolitan Area: An Implementation Handbook*. Report No. FTA-NY-06-0152-93,.U.S. Federal Transit Administration, Office of Technical Assistance and Safety, Springfield VA. (National Technical Information Service).
This article presents findings of a multi-year study of the relationship between land values and transit access in the New York area. Initiated as an element of the Third Regional Plan for the New York/New Jersey/Connecticut Region, the results serve as a research prototype for transit systems throughout the US. Two economic models are presented – NYREG and NYSTA – which predict shifts in land values within the region and at a parcel scale in relation to transit stations. "The total benefits of reducing wait times on transit equal $3.7 billion ($1.57/trip). Taxing the producer surplus increases would raise $100 million/yr, enough to finance a doubling of the number of trains (an unknown cost)."

30) Robert J. Armstrong (1994), "Impacts of Commuter Rail Service as Reflected in Single-Family Residential Property Values", *Transportation Research Record 1466*, pp. 88-97.
Single-family residential properties in metropolitan Boston, Mass, are examined. Results indicate that there is an increase in single-family residential property values of approximately 6.7% by virtue of being located within a community having a commuter rail station. At the regional level there appears to be a significant impact on single-family residential property values resulting from the accessibility provided by commuter rail service.

31) William G. Barker (1998), "Bus Service and Real Estate Values", *68th Annual Meeting of the Institute of Transportation Engineers, Toronto, Ontario,* (available from ITE, 1099 14th Street, NW, Washington DC 20005-3438 U.S.A.).
Real estate developers and lending institutions are not willing to base investments on the location of easily changed bus routes. However, the availability of local bus service does increase the value of at least some urban real estate.

32) Keith Bartholomew and Reid Ewing (2010), "Hedonic Price Effects of Pedestrian- and Transit-Designed Development," under review by the *Journal of Planning Literature*; at http://faculty.arch.utah.edu/bartholomew/Individual%20Files/12_Hedonic_Price_Effects.pdf.
This article reviews literature concerning the use of hedonic pricing to evaluate whether consumer demand for pedestrian- and transit-designed development is growing. This analysis indicates that transit accessibility, walkability, and local environmental quality do tend to be capitalized into real estate prices. It demonstrates that amenities of transit-designed development, such as improved walkability and mixed land use tend to increase urban land values independent of transit accessibility.

33) Nathaniel Baum-Snow and Matthew E. Kahn (2001), "The Effects of Public Transit Projects to Expand Urban Rail Transit," *Journal of Public Economics*, Vol. 77, pp. 241-63.
Study of land values in Boston, Atlanta, Chicago, Portland and Washington DC found that a decrease from three to one kilometer distance from transit stations increases rents by $19 per month, and housing values by $4,972.

34) John D. Benjamin and G. Stacy Sirmin (1996), "Mass Transportation, Apartment Rent and Property Values," *The Journal of Real Estate Research*, Vol. 12, No. 1.
This study examines the effects of transit access, measured in ground distance to the nearest station, on residential rent levels. From over 250 observations of 81 apartment complexes, the authors find that rents decrease by 2.4% to 2.6% for each one-tenth mile in distance from a Metro station in Washington, DC.

35) M. Bernick, R. Cervero and V. Menotti (1994), *Comparison of Rents at Transit-Based Housing Projects in Northern California*, Working Paper 624, University of California at Berkeley, Institute of Urban and Regional Development.
"Rents at the BART housing projects are higher than those of nearby projects."

36) C. Bollinger, K. Ihlanfeldt, and D. Bowes (1998), "Spatial Variation in Office Rents Within the Atlanta Region", *1996 TRED Conference, Lincoln Land Institute, Cambridge, Mass.*, Georgia State University, Policy Research Center.
This is a hedonic rent study of office buildings in the Atlanta area from 1990 to 1996. Part of the rent differences among office buildings is due to differences in wage rates, transportation rates, and proximity to concentrations of office workers. The convenience of face-to-face meetings facilitated by office agglomerations is also reflected in office rents, providing evidence that agglomeration tendencies continue to be important in explaining office concentrations, despite the ability of information technology designed to reduce the need for some such contacts.

37) Robert J. Borhart (1994), *Corridor Reservation: Implications for Recouping a Portion of the 'Unearned Increment' Arising from Construction of Transportation Facilities,* Final Report, Virginia Transportation Research Council, Charlottesville, Va., Series title: VTRC; 94-R15.
Increases in land rents show up in higher property taxes, not only in property selling prices. The author quotes President Franklin D. Roosevelt supporting value capture.

38) David R. Bowes and Keith R. Ihlanfeldt (2001), "Identifying the Impacts of Rail Transit Stations on Property Values," *Journal of Urban Economics*, Vol. 50, pp. 1-25.
Found that properties between one and three miles of a rail transit station in Atlanta, Georgia have a higher value than otherwise comparable properties located more than three miles away, but properties within a quarter mile of a station are worth 19% less than homes beyond three miles.

39) Cambridge Systematics (1998), *Economic Impact Analysis of Transit Investments: Guidebook for Practitioners*, TRB Report 35, Transit Cooperative Research Program, Transportation Research Board (www.trb.org).

This comprehensive guidebook describes various technical methods for measuring the economic impacts of transit investments, including changes in adjacent property values. It also includes a summary of research findings on the increases in property values found around BART stations in the San Francisco Bay area. Results are summarized in the table below. Tables 9.6 – 9.10 list 15 studies dating from 1970 to 1996 that calculate the premium effect of transit investments, measured in unit area of property.

Table 1 **Property Value Increases Near BART Stations** (1997 U.S. Dollars)

Land Use Type	Distance From BART Station (ft)	CBD/Urban	Suburban
Single Family		*Per Unit*	*Per Unit*
	0-500	$48,960	$9,140
	500-1,000	$14,400	$7,930
	1,000-1,500	$8,640	$3,040
	2,000-2,500	$5,760	$5,500
Multi-Family		*Per Unit/Month*	*Per Unit/Month*
	0-1,300	$50,00	$42.30
	1,300-2,500	$0.00	$0.00
Offices		*Per Sq. Ft/Month*	*Per Sq. Ft/Month*
	0-1,300	$0.13	$0.00
	1,300-2,000	$0.07	$0.28
	2,000-2,500	$0.00	$0.00
Retail		*Per Sq. Ft/Month*	*Per Sq. Ft/Month*
	0-500	$0.07	$0.24
	500-1,000	$0.00	$0.24
	1,000-2,500	$0.00	$0.00

This table summarizes how property values change with proximity to BART stations for different types of land uses.

40) Robert Cervero (1994), "Rail Transit and Joint Development: Land Market Impacts in Washington, D.C. and Atlanta," *Journal of the American Planning Association*, Vol. 60, No. 1, pp. 83-94.

In addition to public-private cost sharing and the lease revenues derived from commercial space in rail stations, joint development projects generate more fare revenues as they stimulate more transit trips. This study examines how transit investments affect office market indicators. Evidence shows that J-D projects create measurable land value increases and other associated benefits. Among five dependent variables studied, office rent levels are most closely correlated with transit factors – especially ridership. Other benefits associated with transit centers are low vacancy rates, higher absorption rates, and larger office building size. In conclusion, urban rail transit will significantly benefit land use and site rents only if a region's economy is growing and supportive programs such as permissive zoning are in place.

41) Robert Cervero (1996), "Transit-Based Housing in the San Francisco Bay Area: Market Profiles and Rent Premiums," *Transportation Quarterly Vol.* 50, No.3, pp. 33-49.
Cervero's study evaluated apartment rents (most studies evaluate housing prices). Around the three BART stations studied, most residents lived in multi-unit complexes of 20-60 units, were young adults, professionals earning incomes comfortably higher than around some other stations, living alone or as couples, but without children (DINKs), most of whom owned just one car, not one car apiece. The housing near two of the stations those residents lived in did lease at building rents that were 10%-15% higher; around the third (Richmond) no rent premium was found. Cervero did not explain if any characteristic of that neighborhood was different: more industrial or surrounded by lower-income residents or what. He concluded that, "In theory, the existence of a rent premium for multi-unit projects suggests value capture mechanisms (e.g., forming benefit assessment districts) could be used to help finance rail systems."

42) Robert Cervero (2002), "Benefits of Proximity to Rail on Housing Markets: Experiences in Santa Clara County," *Journal of Public Transportation, Vol. 5, No. 1.*
Hedonic price models show that nearness to light rail and commuter rail stops substantially add value to residential parcels. Large apartments within ¼ mile of LRT stations command land value premiums as high as 45 percent. Such market profits provide a potential source of local revenue from value capture programs.

43) Robert Cervero and Michael Duncan (2002), "Transit's Value Added: Effects of Light Commercial Rail Services on Commercial Land Values," *Presented at TRB Annual Meeting* (available at www.apta.com/info/briefings/cervero_duncan.pdf)
This study models the value effects of proximity to light rail and commuter rail stations, as well as freeway intersections, in Santa Clara County, California. Substantial capitalization benefits to commercial-retail and office properties were found, on the order of 23% for a typical commercial parcel near an LRT stop, and more than 120% for commercial land in a business district within a quarter mile of a commuter rail station.

44) Robert Cervero, Christopher Ferrell and Steven Murphy (2002), "Transit-Oriented Development and Joint Development in the United States: A Literature Review," *Research Results Digest*, No. 52, Transit Cooperative Research Program, TRB (www.trb.org).
This is a comprehensive review of literature on transit oriented development. Topics include: Definition of TOD, agency roles, impacts and benefits on land markets, supportive policies and regulations, the use of value capture financing, and station area design supportive of TOD. The authors suggest that transit boards might share in the land-value benefits derived from proximity to transit by participating in joint development as well as value capture.

45) Hong Chen, Anthony Rufolo, and Kenneth Dueker (1998), "Measuring the Impact of Light Rail Systems on Single Family Home Values: An Hedonic Approach With GIS Application", *Transportation Research Record 1617*, TRB (www.trb.org).
Proximity to transit stations account for a 10.5% home price differential. This confirms the findings of Al-Mosaind et. al. (see Ref. 25). They conclude positive effects outweigh negatives.

46) Helen Chaney (2005), *Evaluating The Capitalization Effects Of METRA Commuter Rail Transit Upon Land Values In The Suburban Chicago Municipality Of Arlington Heights: A Tale Of Two Stations*, Masters Thesis, Chapel Hill (https://cdr.lib.unc.edu).
This research indicates that in the transit-oriented development study station of Arlington Heights, housing prices decrease by $12,776 with each 100 meter distance from the station. The comparison station of Arlington Park, which features conventional development, does not reveal capitalization effects associated with proximity to the station. The research provides decision-makers with localized information on the value- added of proximity to transit-oriented development of commuter rail stations upon residential land values.

47) Terry L. Clower, Bernard Weinstein and Michael Seman, *Assessment of the Potential Fiscal Impacts of Existing and Proposed Transit-Oriented Development in the Dallas Area Rapid Transit Service Area*, by the Center for Economic Development and Research, University of North Texas, for the Dallas Area Rapid Transit, 2007; at http://reconnectingamerica.org/public/download/dartreport102507.
This study updates the fiscal impacts of transit oriented development associated with development of the Dallas Area Rapid Transit light rail system. The analysis considers development near existing and planned light rail stations. The findings support the conclusion that the transit-oriented developments associated with DART Rail stations offer substantial fiscal impacts for local taxing entities. These findings include:

- The announced existing and projected values of development projects located near DART Rail stations have increased by almost 50% since 2005.
- While there are many factors contributing to development investment decisions, proximity to an LRT station is often an important site location factor. The total value of projects that are attributable to the presence of a DART Rail station since 1999 is $4.26 billion.
- Adjusting for tax exemptions and the value of public buildings, the taxable value of real and business personal property associated with the projects reviewed in this analysis along existing DART Rail corridors and the planned Green, Orange, and Blue Line extensions exceed $2.84 billion.
- In total, once all announced projects are completed, state and local tax revenues associated with development near DART Rail stations will exceed $127 million per year.

48) CNT (2013), *The New Real Estate Mantra: Location Near Public Transportation*, American Public Transportation Association and the National Association of Realtors (www.apta.com); at www.apta.com/resources/statistics/Documents/NewRealEstateMantra.pdf.
Investigates how well residential properties located near fixed-guideway transit have maintained their value as compared to residential properties without transit access between 2006 and 2011 in

five regions: Boston, Chicago, Minneapolis-St. Paul, Phoenix, and San Francisco. Found that the transit-shed outperformed the region as a whole by 41.6% with higher values for all types of residential properties, single- and multi-family; these benefits increased for transit that was better connected and had higher service frequency; households living in transit sheds had better access to jobs and lower average transportation costs than the region as a whole.

49) David Damm, Steven Lerman, Eva Lerner-Lam, and Jeffrey Young (1980), "Response of Urban Real Estate Values in Anticipation of the Washington Metro," *Journal of Transport Economics and Policy,* pp. 315-335.
The authors draw conclusions from reviews of earlier studies of value capture financing, showing that in response to new transit lines, land values are enhanced in centers of concentrated activity and in predominantly undeveloped areas. Their Metro case study demonstrates that the values of retail properties are highly sensitive to proximity to transit stations. This suggests that retail areas are better suited for value capture policies.

50) Ghebreegziabiher Debrezion, Eric Pels and Piet Rietveld (2006), *The Impact of Rail Transport on Real Estate Prices: Empirical Study of the Dutch Housing Market*, Tinbergen Institute (http://www.tinbergen.nl/discussionpapers/06031.pdf).
This study used a hedonic pricing model to analyse railways impacts on house prices. The railway relevant features considered are: 1. distance to railway station, 2. frequency of railway services at the station, and 3. distance to the railway line, reflecting potential noise and other disturbance effects. Correcting for various other house price determinants we find that dwellings very close to a station are on average about 25% more expensive than dwellings 15 kms or more distant. This percentage ranges between 19% for low frequency stations and 33% for high frequency stations. A doubling of frequency leads to an increase of house values of about 2.5%, ranging from 3.5 for houses close to the station to 1.3% for houses far away. We find a negative effect of distance to railways, probably due to noise effects: within the zone up to 250 meters around a railway line prices are about 5% lower compared with locations further away than 500 meters. As a result of the two distance effects, the price gradient starts to increase as one moves away from a station, followed by a gradual decrease after a distance of about 250 meters. Two railway station references were used the nearest and most frequently chosen station in the post code area. Our estimations reveal that this distinction is important. In many cases the traveller does not choose the closest station. This indicates that railway station accessibility is a more complex concept than one might think. It involves competition between railway stations.

51) Roderick B. Diaz (1999), "Impacts of rail transit on property values," *Commuter Rail/Rapid Transit Conference, Toronto, Ont.*, American Public Transit Association.
The author summarizes recent North American studies examining the impact of 12 rail projects, including both heavy rail and light rail. Several variables contributing to positive and negative changes in property values are identified. In Miami, home values near stations increased by up to 5 percent (Gatzlaff, 1993). In Toronto, nearby home value increases averaged $2,237 (Bajic, 1983). In general, proximity to rail increases accessibility, which is the primary factor in rising property values. (From "Rail transit and property values" in *Information Center Briefing*, No 1 - March 2001, at www.apta.com/info/briefings/briefings_index.htm).

52) Michael Duncan (2010), "The Impact of Transit-oriented Development on Housing Prices in San Diego, CA," Urban Studies
(http://usj.sagepub.com/content/early/2010/05/18/0042098009359958.abstract).
This research measures the influence of transit-oriented development (TOD) on the San Diego, CA, condominium market. A hedonic price model is estimated to isolate statistically the effect of TOD. This includes interaction terms between station distance and various measures of pedestrian orientation. The resulting model shows that station proximity has a significantly stronger impact when coupled with a pedestrian-oriented environment. Conversely, station area condominiums in more auto-oriented environments may sell at a discount. This indicates that TOD has a synergistic value greater than the sum of its parts. It also implies a healthy demand for more TOD housing in San Diego.

53) Robert T. Dunphy (1998), *The Cost of Being Close*, ULI Working Paper 660, Urban Land Institute.
In Southern California, real estate consultant Larry Netherton compared examples of comparable housing for sale at different distances from a central business area. Buyers would have to travel another 15 to 30 minutes to trim $10 to $15 per square foot off the price of a house. In Orange County, two similar upper-end housing projects were compared, one near major employment, retail, and cultural centers, and the other 20 miles away from employment centers. The closer-in units sold for an average of $599,400, the distant units sold for $320,000 – a difference of about $280,000, or $14,000 per mile, or $11,200 per minute of extra commute time. In more distant Riverside County, the closer-in project was priced at $214,900, while a same-sized, similar house 20 miles farther out sold for $141,900. The differential here was $73,000 total, or $3,600 per mile, or $2,400 per minute of extra commute time.

54) Fejarang, R. A., "Impact on Property Values: A Study of the Los Angeles Metro Rail," *Transportation Research Board 73rd Annual Meeting, January 1994.*
Did the announcement of Metro Rail impact property values? The announcement involved a consortium of federal, state, and local funding propositions that began in 1983 and legislated in 1988. The period studied was from 1980 to 1990 during which plans became actualized. That is, investments were secured and rail transit was under design and construction, but not yet available for riders or for rider-dependent shopping. Isolating exogenous variables was accomplished at both macro and micro levels. Using a pre-test - post-test control group, property values following the period of actualization were found to be significantly different from prior values. Property values near rail lines were found to be significantly different from property values located a distance. (From Transport Research Laboratory)

55) Garrett, Thomas A., *Light Rail Transit in America: Policy Issues and Prospects for Economic Development*, Federal Reserve Bank of St. Louis (www.stlouisfed.org), 2004.

Hedonic pricing model applied to residential property values in St. Louis found that average home values increase $140 for every 10 feet closer they are to a MetroLink rail transit station, beginning at 1,460 feet. A home located 100 feet from the station has a price premium of $19,029 compared with the same house located 1,460 feet away. This represents a 32% increase in property values. Their analysis also indicated that beyond 1,460 feet, property values increased with distance from MetroLink stations, but this probably location-related reflects other factors not included in their model, such as traffic volumes on nearby streets, rather than proximity to station. Their analysis did not investigate property value impacts on commercial properties, which probably also increase with proximity to stations.

56) Gatzlaff, Dean H., and Mark Smith (1993), "The Impact of the Miami Metrorail on the Value of Residences Near Station Locations", *Land Economics, Vol. 69 No. 1 (February, 1993).*
Miami Metrorail began in the mid-1980s, in a city that is largely new and sprawling. The 20 miles of rail line run thru downtown, half to the poorer north, half to the richer south. Neither are considered prime areas for redevelopment. Ridership is relatively low (some stations are in blighted areas). The researchers looked at only houses that had sold before and after Metrorail was completed. The researchers found that the line perceptibly increased nearby site values in the richer neighborhoods, not in the poor areas where new capital still had not ventured.

57) Debrezion, Ghebreegsiabiher, Eric Pels and Piet Reitveld (2007), "The Impact of Railway Stations on Residential and Commercial Property Value: A Meta-Analysis," *Journal of Real Estate Finance and Economics*, Vol. 35, pp. 161-180.
This meta-analysis of previous studies finds attempts to explain the variation in the findings by meta-analytical procedures. Generally the variations are attributed to the nature of data, particular spatial characteristics, temporal effects and methodology. Railway station proximity is addressed from two spatial considerations: a local station effect measuring the effect for properties within 1/4 mile range and a global station effect measuring the effect of coming 250 meters closer to the station. The study finds that the effect of railway stations on commercial property value mainly takes place at short distances. Commercial properties within 1/4 mile range are 12.2% more expensive than residential properties. Where the price gap between the railway station zone and the rest is about 4.2% for the average residence, it is about 16.4% for the average commercial property. At longer distances the effect on residential property values dominate. Finds that for every 250 meters a residence is located closer to a station its price is 2.3% higher than commercial properties. Commuter railway stations have a consistently higher positive impact on the property value compared to lights and heavy railway/Metro stations. The inclusion of other accessibility variables (such as highways) in the models reduces the level of reported railway station impact.

58) Goodwin, Ronald E., and Carol A. Lewis (1997), *Land Value Assessment Near Bus Transit Facilities: A Case Study of Selected Transit Centers in Houston, Texas,* Southwest Region University Transportation Center, Houston, Texas.
Site values in the Houston region were falling due to shrinking incomes and diminished incomes. However, values fell less near bus stops than they did in more distant locations.

59) Aaron Gruen (1997), *The Effect Of CTA and METRA Stations on Residential Property Values: Transit Stations Influence Residential Property Values*, Report to the Regional Transportation Authority.
Observing 96 Chicago-area Chicago Transit Authority (CTA) and METRA stations, this study used a literature review, hedonic modeling, and interviews with real estate market experts. More important than the presence of a transit station is the perception of neighborhood desirability. Still, the proximity of transit does positively affect property values. The price of a single-family house located 1,000 feet from a station is 20% higher than a comparable house located a mile away. Realtors in both the affluent suburban West Hinsdale station area and the gentrifying Logan Square area on Chicago's northwest side point out that prices have been increasing and that these locations increasingly appeal to younger, higher-income professionals, many of whom commute via CTA or METRA to downtown Chicago. Apartment properties located closer to train stations tend to realize higher rents and occupancy levels than comparable apartments less conveniently located. (www.ggassoc.com from "Rail Transit And Property Values," *Information Center Briefing*, No. 1, March 2001, at www.apta.com/info/briefings/briefingsindex.htm).

60) Hass-Klau, Carmen, Graham Crampton and Rabia Benjari (2004), *Economic Impact of Light Rail: Results Of 15 Urban Areas In France, Germany, UK and North America*, Environmental & Transport Planning (http://etphassklau.co.uk).
This report investigates tram and light rail impacts on travel patterns and economic activity in in various European and North American cities. It evaluates impacts on residential property prices, office rents and retailing; city center shoppers, car ownership; retail structure and competition between city centres and sub-centres; parking requirements and changes in building and development patterns. Many of these impacts are quantified and compared in tables. Concludes that urban rail can provide substantial economic benefits with appropriate policies and support.

Table 2 **Property Value Impacts of Rail Proximity** (Hass-Klau, Cramption and Benjari, 2004)

City	Factor	Difference
Newcastle upon Tyne	House prices	+20%
Greater Manchester	Not stated	+10%
Portland	House prices	+10%
Portland Gresham	Residential rent	>5%
Strasbourg	Residential rent	+7%
Strasbourg	Office rent	+10-15%
Rouen	Rent and houses	+10%
Hannover	Residential rent	+5%
Freiburg	Residential rent	+3%
Freiburg	Office rent	+15-20%
Montpellier	Property values	Positive, no figure given
Orléans	Apartment rents	None-initially negative due to noise
Nantes	Not stated	Small increase
Nantes	Commercial property	Higher values
Saarbrücken	Not stated	None-initially negative due to noise
Bremen	Office rents	+50% in most cases

This table summarizes how property values are affected by proximity to rail stations in various cities.

61) Hess, Daniel Baldwin and Tangerine Maria Almeida (2007), "Impact of Proximity to Light Rail Rapid Transit on Station-Area Property Values in Buffalo," *Urban Studies*, Volume 44, Issue 5 & 6, May 2007, pages 1041 – 1068.
This study assesses the impact of proximity to light rail transit on residential property values near stations in Buffalo, New York, where light rail has been in service for 20 years, but population is declining and ridership is decreasing. The researchers construct hedonic models of assessed value for residential properties within ½ mile of 14 Metro Rail stations, including independent variables that describe property characteristics, neighborhood characteristics, and locational amenities. The model suggests that every foot closer to a light rail station increases property values by $2.31 (using geographical straight line distance) and $0.99 (using network distance). Consequently, a home located within one-quarter mile radius of a light rail station can earn a premium between $1,300 to $3,000, or 4% to 11% of the median assessed home value. Model results suggest that three independent variables—the number of bathrooms, size of the parcel, and location on the East side or West side of Buffalo—are more influential than rail proximity in predicting property values. Individual regression models for each of the light rail system's 14 stations suggest that effects are not felt evenly throughout the system. Proximity effects are positive in high-income station areas and negative in low-income station areas. An analysis of the actual walking distance to stations (along the street network) versus the perceived proximity (measured by straight-line distance) to stations reveals that the results are statistically more significant in the network distance than the straight line distance model, but the effects are greater in the straight line distance model, which suggests that apparent proximity to rail stations is an added locational advantage compared to physical walking distance to the station.

Christopher M. Hewitt, M.A., and W. E. (Ted) Hewitt (2012), "Effects of Proximity to Urban Rail on Housing Prices in Ottawa," *Journal of Public Transportation*, Vol. 15, No. 4, pp. 43-66; at www.nctr.usf.edu/wp-content/uploads/2012/12/jpt_15.4.pdf.
The conventional wisdom suggests that construction of urban rail transit (URT) lines serves as a magnet for new housing development which increases property values near urban rail transit stations. Existing studies have confirmed this belief, but largely on the basis of global area studies that can often mask locally differentiating factors affecting housing prices. Using data from the City of Ottawa, this study used geographically weighted multiple regression (GWMR) and mapping techniques that reveal that the relationship between URT stations and housing prices is far more complex than is commonly believed. This analysis found a statistically significant positive relationship between house prices and proximity to the O-Train stations, but that this is a relationship that the strength and direction of the relationship is locationally dependent, with housing prices in some areas affected positively and in other areas negatively, probably due to the combination of rail station's undesirable local impacts (noise and traffic) and low levels of rail transit demand among some household types.

62) W. Huang (1994), *The Effects of Transportation Infrastructure on Nearby Property Values: A Review of the Literature*, Working Paper 620, Institute of Urban and Regional Development, Berkeley, California.
The effect of the presence of transportation infrastructure on distant lot values is small, but there are many distant lots, therefore the hedonic method may underestimate incremental site rents. Furthermore, it may be a mistake to regard as exogenous the values attributed to other amenities that developers add in response to accessibility-induced value.

63) Michael Iacono and David Levinson (2012), *Accessibility Dynamics and Location Premia: Do Land Values Follow Accessibility Changes?*, University of Minnesota, presented at the Transportation Research Board Annual Meeting (www.trb.org); at http://nexus.umn.edu/Papers/AccessDynamics.pdf.
The structure of transportation networks and the patterns of accessibility they give rise to are an important determinant of land prices, and hence urban spatial structure. This paper provides evidence of this dynamic relationship using data on home sales in the Minneapolis-St. Paul (MN) metropolitan area, coupled with disaggregate measures of urban accessibility for multiple modes, from 2000 to 2005. It tracks the effects of marginal changes in accessibility over time, as opposed to static, cross-sectional relationships, by using an unconventional approach in which the unit of observation is a *representative house* for each transportation analysis zone in the region. This approach allows us to control for changes in structural attributes of houses over time, while also isolating the effect of changes in accessibility levels. Finds that automobile access to employment has a significant impact on housing prices, and although walking and public transit employment access also had a positive impact the results are not considered statistically significant. Results of this approach are compared to a cross-sectional model using the same variables for a single year to illustrate important differences. These differences are discussed in terms of their implications for practitioners and for further investigations of the relationship between transportation, location and land value.

64) J. H. Kay and G. Haikalis (2000), "All Aboard", *Planning, Vol. 66, No. 10, pp. 14-19.*
Property values around Dallas, Texas DART transit stations increased approximately 25% since operation began in 1996. However, the region's sprawled development complicates transit's contribution to regional transport. A sidebar describes New Jersey's new Hudson-Bergen line.

65) Katherine Kittrell (2012), *Vacant Land Values: Reviewing The Success Of Phoenix Metro Light Rail Stations*, Arizona State University, presented at the Transportation Research Board Annual Meeting (www.trb.org); at
www.lai.org/newsletter/september2011/VacantLandValues.pdf.
This article investigates the land market response to the 1997 announcement of the Phoenix METRO light rail line station locations as a time series case study. It compares sales prices per square foot before and after light rail was announced, and commercial vacant land within a ½ mile of transit stations to vacant land at Phoenix's most prominent, centrally located, mixed-use intersections not serviced by high capacity transit to further evaluate light rail development potential. The results indicate that most rail station areas experienced increased property values and increased development activity, particularly if supported by effective station-area plans that support development.

66) Knaap, Gerrit, Lewis Hopkins, and Arun Pant (1996, *Does Transportation Planning Matter? Explorations into the Effects of Planned Transportation Infrastructure on Real Estate Sales, Land Values, Building Permits, and Development Sequence*, Lincoln Institute of Land Policy, Research Paper.
This study observed property values in the Westside LRT corridor in Washington County, suburban Portland, Oregon. The study compared values prior to construction with values at the beginning of LRT operations. Values of parcels located within ½-mile of the line were found to decrease with distance from the stations, but rise with distance from the rail line between stations. Thus, the opposite affects of accessibility and nuisance were deduced.

67) Kate Ko and Xinyu (Jason) Cao (2013), "The Impact of Hiawatha Light Rail on Commercial and Industrial Property Values in Minneapolis," *Journal of Public Transportation*, Vol. 16, No. 1, pp. 47-66; at www.nctr.usf.edu/wp-content/uploads/2013/03/jpt_16.1.pdf.
Develops hedonic pricing models to assess the value-added of the Hiawatha LRT on commercial and industrial properties, using data on properties sold before and after its completion. The results show that the LRT has induced a significant price premium for properties nearby and that the impact extends to almost 0.9 miles away from LRT stations, significantly more than the 0.3-0.5 mile distance usually assumed. For example, the price gradient is approximately $6,000 per meter for a typical property located 400 meters (1/4 mile) away from LRT station, while it drops to about $4,000 for a property 800 meters (1/2-mile) away.

68) Landis, John, Robert Cervero, Subhrajit Guhathukurta, David Loutzenheiser, and Ming Zhang (1005), Rail Transit Investments, *Real Estate Values, and Land Use Change: A Comparative Analysis of Five California Rail Transit Systems*, Monograph 48, Institute of Urban and Regional Studies, University of California at Berkeley.
This study measured ground distance to BART stations in Alameda and Contra Costa Counties, California. The authors found that 1990 single family home prices declined by $1 to $2 per meter distance from a BART station. They did not find a significant impact on home values based on proximity to CalTrain commuter rail stations, although houses within 300 meters of the CalTrain right-of-way sold at a $51,000 discount. No increase in value around commercial / industrial stops was found, but the authors note that commercial property observations encounter significant data measurement problems.

69) Steven Lewis-Workman and Daniel Brod (1997), "Measuring the Neighborhood Benefits of Rail Transit Accessibility," *Transportation Research Record 1576: 147-153.* (Transportation Research Board www.trb.org)
The authors found that within a one-mile radius from the Pleasant Hill rail station in the Bay Area, average home prices decline by about $1,578 for every 100 feet distance from the station. In the area within a one-mile radius from the Forest Hills, 67th Avenue, and Rego Park rail stations, average home prices decline about $2,300 for every 100 feet distance from the station.

70) Carol Abel Lewis and Gwendolyn C. Goodwin (2013), *The Impact Of Bus Transit Centers On Nearby Single Family Residential Land Values In Houston, Texas*, Transportation Research Board Annual Meeting (www.trb.org); previous version at http://swutc.tamu.edu/publications/technicalreports/167372-1.pdf.
This study assesses the effect of bus transit centers in Houston, Texas, on nearby single family residential property values. It indicates that the transit centers in low to moderate income neighborhoods have a positive influence on property values. In the single affluent neighborhood in the study, results indicate the transit center negatively affects property value, but the influence is less than other variables.

71) Shishir Mathur and Christopher E. Ferrell (2009), *Effect Of Suburban Transit Oriented Developments On Residential Property Values*, Mineta Transportation Institute (www.transweb.sjsu.edu); at www.transweb.sjsu.edu/MTIportal/research/publications/documents/Effects%20of%20Sub-Urban%20Transit%20%28with%20Cover%29.pdf. Also see, "Measuring The Impact Of Sub-Urban Transit-Oriented Developments On Single-Family Home Values" in *Transportation Research A*, Vol. 47, pp. 42-55, http://dx.doi.org/10.1016/j.tra.2012.10.014.
This study estimated the impact of *Transit Oriented Developments* (TODs) on surrounding single-family residential housing values in four suburban San Francisco Bay area neighborhoods: Ohlone Chnyoweth TOD in San Jose, Pleasant Hill TOD in Contra Costa County, Downtown Hayward TOD in the City of Hayward in Alameda County, and Bay Meadows TOD in the City of San Mateo in San Mateo County. Finds that every 100 feet decrease in distance for single-family homes to the Ohlone Chynoweth TOD the home sale price increased an average of $10,150 or 1.5%. However, the remaining three TODs do not have any effect – positive or negative – on the prices of surrounding single-family homes.

72) Musaad A. Al-Mosaind, Kenneth J. Duecker, and James G. Strathman (1992), "Light Rail Transit Stations And Property Values: A Hedonic Price Approach," *Discussion paper 92-04, Presented at Transportation Research Board 72nd Annual Meeting*, Center for Urban Studies, School of Urban and Public Affairs, Portland State University.
Proximity to LRT stations may improve the accessibility of residents to the CBD and the rest of the urban area, and may also result in transportation cost savings. These effects show up in higher property values. However, in the absence of attention to design qualities, LRT stations may impose negative externalities, depreciating nearby home values. Which of these two effects predominates? In metropolitan Portland, Oregon, two distance models to LRT stations were compared. The first showed a positive capitalization in sale prices for homes within 500 m (1600 ft or 1/4 mi) walking distance. This effect was equally felt for all homes within that distance zone. The second model found a statistically weak negative price gradient for homes within the 500-m zone. This implies a positive influence of proximity, where homes are priced about 10% higher. Zoning for higher density around stations also raised site values.

73) Arthur C. Nelson (1992), "Effects Of Elevated Heavy-Rail Transit Stations On House Prices With Respect To Neighborhood Income," *Transportation Research Record 1359: 127-132.*
In Atlanta's low value neighborhoods, a transit stop raises value, and in high value communities installing a transit stop lowers site value – by nearly the same amount.

74) Arthur C. Nelson (1999), "Transit Stations And Commercial Property Values: A Case Study With Policy And Land-Use Implications," *Journal of Public Transportation,* Vol. 2, No. 3.
Develops a model of commercial property value with respect to transit station proximity and the role of policies that encourage station area commercial development without discouraging such development elsewhere. Applies this model in Atlanta's *Midtown*, located 1 km north of the downtown edge, served by three heavy rail transit stations operated by the Metropolitan Atlanta Transit Authority (MARTA). To encourage transit-oriented development near MARTA stations the city waives parking requirements and floor area ratio restrictions. Commercial property values are affected positively by both access to rail stations and policies that encourage more intensive development around those stations. Citywide analysis, measuring access as ground distance to a MARTA station, finds that price per square meter falls by $75 for each meter away from transit stations. Prices rise by $443 for location within special public interest districts (SPIDs). At the time of his study, Atlanta was the most sprawled metro region in the nation, and that the size of the SPIDs was identical to comfortable walking distance from stations, about a 1/4 mile radius. Theoretical and policy implications are explored.

75) Robert B. Noland, Stephanie DiPetrillo and Michael L. Lahr (2012), *Residential Property Values and the New Jersey Transit Village Program*, Voorhees Transportation Center, Rutgers University (www.policy.rutgers.edu/vtc); at http://policy.rutgers.edu/vtc/tod/documents/2011_PropertyValuesinNJTransitVillages.pdf.
Since 1999 New Jersey has designated 23 Transit Villages in municipalities around the state with the intention of intensifying development around rail stations and bus hubs. This study measures the appreciation in residential property values compared to other municipalities within the state. Some limited positive evidence of being designated a New Jersey Transit Village is found. Econometric analysis of the change in average residential sales price over nine years finds an association, but cannot establish a causal effect. Case study analysis of selected transit villages suggests that the forethought, commitment, and political will required to apply for Transit Village status may be what sparks municipal development rather than the designation itself.

76) Parsons Brinkerhoff (2001), *The Effects of Rail Transit on Property Values: A Summary of Studies*, Project 21439S, Task 7, NEORail II, Cleveland, Ohio, 27 February 2001; at www.reconnectingamerica.org/public/download/bestpractice162.
This paper summarizes the results of several previous studies in tabular form. The authors note that varying methodologies make it difficult to compare results. Nevertheless, it is clear that in most cases access to transit systems is valued by property owners. Rail's influence on residential values is demonstrated more clearly than on commercial uses; however, influence on commercial

values appears to vary by: (i) how much accessibility is improved, (ii) the relative attractiveness of locations near stations, and (iii) the strength of the regional real estate market.

77) Susan J. Petheram, Arthur C. Nelson, Matt Miller and Reid Ewing (2013), "Use of the Real Estate Market to Establish Light Rail Station Catchment Areas: Case Study of Attached Residential Property Values in Salt Lake County, Utah, by Light Rail Station Distance," *Transportation Research Record 2357*, Transportation Research Board (www.trb.org); summary at http://trid.trb.org/view/2013/C/1242804.
This study measured the value of rental apartment buildings located in 0.25 mile to 1.5 mile distance bands from TRAX light rail stations in Salt Lake County, Utah. Controlling for structural, neighborhood, and location characteristics, a positive relationship between TRAX station proximity and rental apartment building values was found to 1.25 mi but not beyond.

78) Victoria A. Perk and Martin Catalá (2009), *Land Use Impacts of Bus Rapid Transit: Effects of BRT Station Proximity on Property Values along the Pittsburgh Martin Luther King, Jr. East Busway*, National Bus Rapid Transit Institute, Center for Urban Transportation Research, University of South Florida, for the Federal Transit Administration (www.fta.dot.gov); at www.nbrti.org/docs/pdf/Property%20Value%20Impacts%20of%20BRT_NBRTI.pdf.
This study used a hedonic regression model to estimate the impact of distance to a BRT station on the fair market value of single-family homes. Because many BRT systems operating in the United States may be too new to find evidence of capitalization into property values, data from Pittsburgh's East Busway, one of the oldest operating BRT systems in the country, was used. Decreasing marginal effects were found: moving from 101 to 100 feet from a station increases property value approximately $19.00, while moving from 1001 to 1000 feet increases property value approximately $2.75. Another way to interpret this result is to say that a property 1,000 feet away from a station is valued approximately $9,745 less than a property 100 feet away, all else constant (this figure is determined by summing the marginal effects for each foot of distance).The results shown in this report are only valid for the data used in Pittsburgh's case. As more BRT systems continue operating in the United States for more years, this method should be applied to other cities and other types of properties to gain a better understanding of the general property value and land use impacts of proximity to BRT.

79) Victoria A. Perk, Martin Catalá and Steven Reader (2012), *Land Use Impacts of Bus Rapid Transit: Phase II—Effects of BRT Station Proximity on Property Values along the Boston Silver Line Washington Street Corridor*, National Bus Rapid Transit Institute, Center for Urban Transportation Research, University of South Florida, for the Federal Transit Administration (www.fta.dot.gov); at www.fta.dot.gov/documents/FTA_Report_No._0022.pdf.
This report describes an effort to quantify the impacts of access to BRT stations on the sale prices of surrounding condominiums located along Boston's Washington Street where Phase I of the Silver Line BRT began in 2002. To test the hypothesis that the BRT stations have an impact on market value that is commensurate with rail transit projects (considering the level and

permanence of services and facilities), a hedonic regression methodology was used to estimate the impact of access to BRT station on sale prices of condo units. A key result is that for condo sales that occurred in 2007 or 2009, the BRT premium was approximately 7.6 percent. For condo sales in 2000 and 2001, prior to the opening of the Silver Line, no sales premium existed for proximity to the corridor. Further, changes in land uses along the corridor were examined over the period from 2003 to 2009.

80) Pickett, M.W., and K.E. Perrett (1084), *The effect of the Tyne and Wear Metro on Residential Property Values,* Supplementary Report 825, Transport and Road Research Laboratory, Crowthorne, Berkshire, U.K.
Applies three analysis methods. Results show an average increase of £360 (1.7%) in the value of properties near Metro stations during the four- month period surrounding the date on which each section of line opened. In reference to related studies, Dvett et. al. found a small but significant positive effect on the value of single-family dwellings at three of the six BART station areas studied. Lerman et. al. found that distance from Washington Metro stations influences property values, the value rising as the opening date nears, and falling if the opening is delayed. The Regional Commission in Atlanta found an associated increase in industrial property values.

81) Price Waterhouse Coopers (2001), *Review of Property Value Impacts at Rapid Transit Stations and Lines*, Technical Memorandum 6, Richmond/Airport – Vancouver Rapid Transit Project, April 3, 2001.
The authors review transit impact studies from selected cities across North America. The reviewers find a positive relationship between property values and station location, but also a possible negative impact on single-family homes along the line due to nuisance impacts. Four research reports are summarized: (1) Transit Case Studies for the City of Hillsboro, Oregon, (2) Transit Benefits 2000 Working Papers, (3) Light Rail Transit Impacts in Portland, Oregon, and (4) Impact of the Vancouver, BC Skytrain on Surrounding Real Estate Value.

82) Thomas M. Richert (1999), *Economic Impacts of Automated People Mover Development in Commercial Centers*, Advanced Transit Association.
After one year of Automated People Mover (APM) operation, downtown retail sales grew 8% in Denver, 4% in St. Louis, and 1% in Miami (where patronage of downtown commercial space had historically lagged). Higher retail sales translate into higher site values.

83) Rice Center for Urban Mobility Research (1987), *Assessment of Changes in Property Values in Transit Areas*, Urban Mass Transit Administration, Houston, Texas.
This is a summary of earlier findings from Toronto, Baltimore, Denver, San Diego, and San Francisco. Some transit centers showed a 100% to 300% increase in commercial site values. In Atlanta, 61% of the businesses within 500 feet of a transit stop reported increased sales.

84) Martin E. Robins and Jan S. Wells (2008), *Land Development at Selected Hudson-Bergen Light Rail Stations*, Alan M. Voorhees Transportation Center at Rutgers University; at http://policy.rutgers.edu/vtc/reports/REPORTS/HBLR%20Final%20Report.pdf.
The Hudson Bergen Light Rail (HBLR) line is a 20.6-mile, 23-station commuter rail route. Since it opened in 2000, ridership has grown and land development has increased around stations at a scale beyond that which road network alone could have borne. Acres of old, abandoned industrial sites along the route have been transformed into compact residential, office and retail developments in pedestrian, transit-friendly environments reflecting "smart growth" principles. This study identified more than 10,000 new units conservatively estimated to be worth $5.3 billion were completed by 2005.

85) Rodríguez, Daniel A., Felipe Targa (2004), "The Value Of Accessibility To Bogotá's Bus Rapid Transit System," *Transport Reviews*, Vol. 24, No. 5 (www.tandf.co.uk/journals/tf/01441647.html), pp. 587 – 610. Daniel A. Rodríguez and Carlos H. Mojica (2008), "Land Value Impacts of Bus Rapid Transit: The Case of Bogotá's TransMilenio," *LandLines*, April, Lincoln Institute for Land Policy (www.lincolninst.edu).
By estimating spatial hedonic price functions, this paper determines the extent to which access to BRT stations in Bogotá, Colombia currently are capitalized into land values. Results suggest that every additional 5 minutes of walking time to a BRT station reduced rental price 6.8% to 9.3%, after controlling for structural characteristics, neighborhood attributes, and proximity to the BRT corridor. Evaluated at the average walking time to a BRT station, this effect translates into an elasticity of -0.16 to -0.22. Although these estimates cannot be attributable directly to the presence of the BRT system due to the study's cross-sectional design, they suggest that the land market in Bogotá values access to BRT station locations.

86) S. Ryan (1999), "Property Values and Transportation Facilities: Finding the Transportation-Land Use Connection," *Journal of Planning Literature, Vol. 13, Issue 4 (May): 412-427.*
Ryan reviews empirical studies of the relationship between the presence of transport facilities – highways, heavy rail, and light rail transit systems – and property values. Inconsistencies in findings from this literature over the past several decades are explained. For example, results vary based on whether researchers measure accessibility in terms of travel time or travel distance. Measuring distance yields mixed results in property value effects. Measuring time yields the expected inverse relationship between access to transportation facilities and property values. The delineation of study areas also influences the direction of effects. This study offers a new interpretation of the transportation facility-property value literature, improving the ability to measure relationships and anticipate land-market responses to transport facilities.

87) Sedway Group, *Regional Impact Study*, Report commissioned by Bay Area Rapid Transit District (BART), July 1999.
This is a review of studies of the benefits associated with BART service, measured in positive residential and office property impacts. Reported single family home values fell by $3,200 to $3,700 for each mile distance from a BART station in Alameda and Contra Costa counties.

Apartments near BART stations were found to rent for 15% to 26% more than apartments distant from BART stations. The average unit land price for office properties also decreased as distance from a BART station increased, from $74 per square foot within ¼ mile of a station to $30 per square foot at locations exceeding ½ mile. Sedway Group, San Francisco, CA at www.sedway.com (From "Rail transit and property values," Information Center Briefing, No. 1 - March 2001, at www.apta.com/info/briefings/briefings_index.htm).

88) Voith, Richard, "Changing Capitalization of CBD-Oriented Transportation Systems: Evidence from Philadelphia, 1970-1988," Federal Reserve Bank of Philadelphia, Working Paper No. 31-19 (1991); *Journal of Urban Economics*, Vol. 33 (1993): 361-376.
Voith estimates house value premiums associated with CBD-oriented train service provided by the Southeastern Pennsylvania Transportation Authority (SEPTA). Unlike most previous studies, he documents changes over an extended period, for each year in his 19-year sample. His data include over 59,000 home sales. In 1980 the average sales price was nearly $120,000. Prices declined from 1974 through 1982, bottomed out during 1983 and 1984, and rose steeply from 1985 through 1988. Using hedonic house value regressions, he finds strong evidence that accessibility to the CBD is capitalized into suburban house values. The premium began in 1970 at well over $12,000, declined until 1976, bottoming out at a bit over $5,000, then from 1978 to 1984 averaged nearly $9,000, and at the end of his sample, 1988, reached $20,000 plus. The value of such accessibility fluctuates with the economic health of the city (which is impacted by the City's tax on wages). Between 1981-1988 while employment in the suburbs grew rapidly, so did the premium associated with train service (to the CBD) increase dramatically, indicating that the central city economy still contributes significantly to the overall wealth of communities. Hence, suburban communities may not be able to isolate themselves from central decline.

89) Weinberger, Rachel R., *Commercial Rents and Transportation Improvements: Case of Santa Clara County's Light Rail,* WP00RW2, Lincoln Institute of Land Policy, 2001.
In Santa Clara County, California, property owners sued the County claiming losses in value from the nearby light rail. To determine the actual effect of the light rail facility on property values, Weinberger examined commercial property rents comparing accessibility to transit and to highway as determinants of rent, and analyzed the effects over time. Controlling for other factors, properties within a half-mile of light rail stations were found to command almost 15% more rent. Highway access, being ubiquitous, offers no particular locational advantage. As the transit system matured, nearby properties accrued greater benefits. But, in times of high demand, so did all other locations command higher rents.

90) Weinstein, Bernard L., and Terry L. Clower, *The Initial Economic Impacts of the DART LRT System*, Center for Economic Development and Research, University of North Texas, July 1999.
Values of properties adjoining Dallas's DART (www.dart.org) light rail stations grew 25% more than similar properties not served by rail. Proximity to stations appears to be an economic advantage for most classes of real estate, especially Class A and C office buildings, and commercial strip retail outlets. Average occupancy rates for Class A buildings near rail stations

increased from 80% in 1994 to 88.5% in 1998, while rents increased from an average $15.60/sf to $23/sf. Commercial strip retailers near the stations experienced a 49.5% gain in occupancy and a 64.8% improvement in rental rates. (from "Rail transit and property values" in *Information Center Briefing*, No. 1, March 2001, at www.apta.com/info/briefings/briefings_index.htm.)

91) Sisi Yan, Eric Delmelle and Michael Duncan (2011), *The Impact of a New Light Rail System on Single Family Property Values in Charlotte, North Carolina*, World Symposium on Transport and Land Use Research (http://wstlur.org).
This paper applies hedonic analysis to evaluate the impact of a new light rail system on single-family housing values in Charlotte, North Carolina. Results indicate that before the rail system began operation, proximity to the future rail corridor had a negative influence on home prices, likely due to the presence of industrial land use zones around existing stations. However, area housing prices started to increase 10-15% during the operational phase. This appears to reflect improved accessibility and other features of transit-oriented development.

Lessons From Developing Countries

92) Calvo, Christina M., *Options for Managing and Financing Rural Transport Infrastructure*, Technical Paper No. 411, World Bank, Washington, DC, 1998.
Berkshire, England successfully privatized the maintenance of roads. Calvo suggests applying this model to developing countries, where central governments are often hierarchical and indifferent to rural areas. "If increases in land value are captured mainly by the local elite or by outsiders, however, there will be little motivation for mass participation in the project."

93) Cervero, Robert, and Bambrang Susantono, *Rent Capitalization and Transportation Infrastructure Development in Jakarta*, Review of Urban and Regional Development Studies Vol. 11, No. 1, Department of City and Regional Planning, University of California, Berkeley, Calif., 1999.
Freeway off-ramps raised the rents of nearby offices in Jakarta, Indonesia. Thus, value capture would be fair, but the method is not feasible because land ownership and values are not registered; furthermore, owners can buy off tax collectors.

94) M.Q. Dalvi (1996), "Value Capturing as a Method of Financing Rail Projects: Theory and Practice," *From the 7th CADATU Conference: Urban Transport in Developing Countries*, New Delhi, India.
Hong Kong's Mass Transit Railway Corp chooses to not sell land but co-develop it. Property rental income financed about 22% of MTRC's operating cost in 1993.

95) Deborah Salon and Sharon Shewmake (2012), Opportunities For Value Capture To Fund Public Transport: A Comprehensive Review Of The Literature With Examples From East Asia, Asian Development Bank and ITDP, presented at the Transportation Research Board Annual Meeting (www.trb.org); at www.itdp.org/uploads/Salon and Shewmake Opportunities for Value Capture to Fund Public Transport.pdf.
Successful public transport systems increase the value of surrounding land. Value capture is the concept that government may be able to capture at least part of this increase in land value along public transport corridors, and use these funds to subsidize the system. We shed light on when and how value capture could be used to finance public transit by surveying three strands of literature related to value capture: evidence of the land development impacts of public transport, estimates of land value increases attributable to public transport, and case studies of the use of value capture mechanisms to finance public transport. We find that the best strategies for implementing value capture policies are not the same everywhere. They depend on the particulars of the city's institutional capabilities, as well as the general health of the local economy and the local land development industry. The value capture mechanism that works best for each city will depend on the capacity of the government to track the value of land and to levy land taxes, the government's ability to assemble and acquire land at a favorable price, and its capacity to act as a savvy business partner in land development.

96) Taotao Deng and John D. Nelso (2010), "The Impact of Bus Rapid Transit on Land Development: A Case Study of Beijing, China," *World Academy of Science, Engineering and Technology*, Vol. 66; at www.waset.org/journals/waset/v66/v66-189.pdf.
This study uses qualitative (interviews) and quantitative analysis (questionnaire survey and longitudinal analysis of property data) to investigate land development impact resulting from

BRT in Beijing, China. The empirical analysis suggests that BRT has a positive impact on the residential and commercial property attractiveness along the busway corridor. The statistical analysis suggests that accessibility advantage conferred by BRT is capitalized into higher property price. The average price of apartments adjacent to a BRT station has gained a relatively faster increase than those not served by the BRT system. The capitalization effect mostly occurs after the full operation of BRT, and is more evident over time and particularly observed in areas which previously lack alternative mobility opportunity.

97) Ian G. Heggie (1989), "Financing Public Transport Infrastructure: An Agenda for Reform", *Proceedings of Seminar M, PTRC summer annual meeting, Vol. P327*, Planning and Transport Research and Computation (International) Co.
In the developing world, value generated by a transport system can be significant. However, often cadastre records are missing or lack information on registered owners and the value of parcels. Furthermore, better-off owners "are often influential local politicians".

98) Institution of Civil Engineers (1990), *Rail Mass Transit for Developing Countries*, London: Telford.
R. T. Meakin, in "Hong Kong's mass transit railway: vital and viable" notes that in Hong Kong the system receives no subsidy. All of its costs, including interest, are derived from rents from land development. "Discussion" by J. Faukner notes that the World Bank requires mass transit (but not roads) to be self-financing, and that lenders should minimize environmental impacts.

99) L. R. Leinbach (1995), "Transport and Third World Development: Review, Issues, and Prescription," *Transportation Research. Part A, Policy and Practice*, Vol. 5, pp. 337-344.
This study finds that even distance sites benefit from the presence of roads. It concludes that the first step is to develop self-governing transit institutions (to evade corruption). [Author's suggestion: transportation vouchers, or even a general citizens dividend, might be more equitable and effective than subsidizing a public transit agency with collected site rent.]

100) Munoz-Raskin, Ramon (2007), *Walking Accessibility to Bus Rapid Transit in Latin America: Does it Affect Property Values? The case of Bogota, Colombia*, TRB (www.trb.org).
This study investigated how proximity to Bogotá, Colombia's Transmilenio Bus Rapid Transit (BRT) affects residential property values. This research indicates that results vary by socio-economic strata. Low-income housing showed average 4.3% value discounts for new properties in the immediate walking proximity to trunk stations and 7.3% for the feeder lines, compared to the properties in the five-to-ten minute walking distance, reflecting the negative impacts of BRT air and noise pollution, and the tendency of low-income people to use cheaper paratransit instead of BRT. Middle income housing value premiums of 2.3% and 14.4% for new properties located in the immediate walking distance to trunk stations and to feeder lines, compared to five-to-ten minute walking distance. High-income housing revealed discounts averaging 19.9% for new properties in the immediate walking proximity of the trunk lines, compared with the average value of high-income housing in the five-to-ten minute walk to the BRT system, reflecting high-income household's preference for private vehicle transport.

101) Alexandra Ortiz (1996), "Economic Analysis of a Land Value Capture System Used to Finance Road Infrastructure: The Case of Bogota, Colombia." Ph.D. thesis, University of Illinois at Champaign-Urbana.
Starting in 1926, the City of Bogota charged property owners the anticipated rise in site value ("valorization") before road construction began. Revenue from these charges declined in the late 1980s as assessments fell behind and as poor landholders could not afford even the lagging assessments. A 1992 valorization had collected 80% of its target by mid 1995. Presumably the city made up the difference with other taxes, since new roads were built. What worked for roads could work for transit as well. Ortiz concludes that pre-emptive betterment charges for infrastructure would not be needed if a general land tax were working well. Columbia has a municipal land tax rate of 1% and a national rate of 2%, plus a land gains tax of up to 50%, yet land is registered at only 20% of its value.

102) A. P. Prest (1996), *Transport Economics in Developing Countries.* Praeger.
Prest relates how Uruguay has historically funded roads from land rent. In 1928 the country set up its Permanent Fund for Development and Farm-to-Market Roads, financed by taxes on gasoline, tires, and land value – prorated by distance from the road. Even at a very low rate, 0.125% to 0.65%, the land value tax funded 1/3 of the road construction budget. However, assessments did not keep pace with rising land values, and confusion arose when proximity to more than one road entered into the reckoning. Hence, the LVT fell into disuse.

103) Deborah Salon, Jingyan Wu and Sharon Shewmake (2015), "Impact of Bus Rapid Transit and Metro Rail on Property Values in Guangzhou, China," *Transportation Research Record 2452*, Transportation Research Board (www.trb.org), pp. 36-45; http://trid.trb.org/view.aspx?id=1290068.
Study examines the effects of these two public transport systems on the prices of apartments in the city by using a unique set of data collected from a mainstream Chinese real estate website. Ordinary least squares, spatial regression models, and quantile hedonic regression were used to estimate the price premium for transit access. The findings suggest that proximity to the metro and the bus rapid transit line has a substantial and statistically significant effect on apartment prices that varies by district and the amenities provided.

104) Shunso Tsukada and Chiaki Kuranami (1990), "Value Capture with Integrated Urban Rail and Land Development: The Japanese Experience and Its Applicability to Developing Countries," *Proceedings of Seminar M, PTRC Transport and Planning Annual Meeting, University of Sussex, England,* PTRC Education and Research Services.
To win matching funds from the Japanese central government for planned urban rail systems, local governments must raise 35% of construction costs. Some jurisdictions increase the property tax rate to raise this revenue. Taxable value is determined by distance from the rail station and the city center. Another strategy is to develop fallow land along rail corridors. One private rail line earns 18% of its total revenue from real estate (plus 54% from the railway and 28% from other businesses). The authors recommend that transit agencies serve extant demand from riders,

coincide construction with an economic upswing, cooperate with the private sector, commit themselves then deliver on their promises, and become competitive with other transport modes.

105) D. Walmsley, and G. Gardner (1993), *The Economic Effects of Public Transport*, Transport Research Laboratory in TRIS Database: "Taxing Property Values for Transit." Studies from Western Europe, North America, and various developing countries show how changes in the organization and financing of public transport affect patronage and urban development. Its general findings could apply, perhaps on a smaller scale, to other improvements in public transport such as busways. It considers funding from: (1) revenues, (2) taxation, (3) land value capture, (4) advantages and disadvantages of assured funding, and (5) the involvement of private capital. Besides improving public conveyance, rapid transit systems can also improve the environment and the 'image' of a city, as well as encourage new urban development and enhance safety. Bus transit deregulation in the UK illustrates how market disciplines can be applied to bus operation, and how privatization might affect public transport. The report offers recommendations for transport planners in Eastern European countries.

Walkability Impacts on Property Values

106) Joe Cortright (2009), *Walking the Walk: How Walkability Raises Home Values in U.S. Cities*, CEOs for Cities (www.ceosforcities.org); at www.ceosforcities.org/files/WalkingTheWalk_CEOsforCities1.pdf.
Cortright (2009) evaluated the effects of walkability on housing prices using the used Walkscore (www.walkscore.com) and 95,000 real estate transactions, controlling for house (size, number of bedrooms and baths, age) and neighborhood characteristics (proximity to the CBD, income, and accessibility to jobs). He found that walkability had a statistically significant, positive impact on housing values in 13 of the 15 markets examined. In a typical metropolitan area, each walkscore point increase was associated with a $700 to $3000 increase in home values, after controlling for other observable factors, so for example, that all else held constant, shifting from a 50th to a 75th percentile walkscore increases a house's value between $4,000 and about $34,000, depending on the market. The biggest gains were in the large cities with the highest densities and best transit systems, such as San Francisco and Chicago. The researchers conclude that these results reflect the value consumers attach to walkable neighborhoods, which tend to be denser, mixed use neighborhoods with good accessibility, including transit service.

107) Gary Pivo And Jeffrey D. Fisher (2010), "The Walkability Premium In Commercial Real Estate Investments," forthcoming *Real Estate Economics* (www.wiley.com/bw/journal.asp?ref=1080-8620); www.u.arizona.edu/~gpivo/Walkability%20Paper%20February%2010.pdf.
This paper examines the effects of walkability on property values and investment returns. Walkability is the degree to which an area within walking distance of a property encourages walking for recreational or functional purposes. We used data from the National Council of Real Estate Investment Fiduciaries (NCREIF) and Walk Score to examine the effects of walkability on the market value and investment returns of more than 4,200 office, apartment, retail and industrial properties from 2001-2008 in the USA. We found that, all else being equal, the benefits of greater walkability were capitalized into higher office, retail and apartment values. We found no effect on industrial properties. On a 100 point scale, a 10 point increase in walkability increased values by 1 to 9 percent, depending on property type. We also found that walkability was associated with lower cap rates and higher incomes, suggesting it has been favored in both the capital asset and building space markets. Walkability had no significant effect on historical total investment returns. All walkable property types have the potential to generate returns as good as or better than less walkable properties, as long as they are priced correctly. Developers should be willing to develop more walkable properties as long as any additional cost for more walkable locations and related development expenses do not exhaust the walkability premium.

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108) Gabriel Ahlfeld and Arne Feddersen (2010), *From Periphery To Core: Economic Adjustments To High-Speed Rail*, Working Paper, London School of Economics, presented at the German Economic Association; at www2.lse.ac.uk/newsAndMedia/news/archives/2010/09/highspeedrail.aspx.

109) R. Armstrong and D. Rodríguez (2006), "An Evaluation of the Accessibility Benefits of Commuter Rail in Eastern Massachusetts using Spatial Hedonic Price Functions," *Transportation*, Vol. 33, No. 1, pp. 21-43.

110) DAG (2011), *Land Value Capture/ Taxation (LVC/T) Scoping Study*, Development Action Group (www.dag.org.za) for the UN-HABITAT and Global Land Tool Network,; at www.dag.org.za/docs/2010/GTNScopingStudyOct10.pdf.

111) Philip Day (1992), *Land Value Capture*, Report to the Local Government Association of Queensland.

112) Eleanor F. Dolan (1970), *The Effect of Rapid Transit on Land Value and Building Construction in Boston, Cambridge and Arlington, 1900-1930*, Cambridge, Mass.

113) Matthew Doherty (2008), *Funding Public Transport Development Through Land Value Capture Programs,* Institute for Sustainable Future (www.cooperativeindividualism.org); at www.cooperativeindividualism.org/doherty-matthew_land-value-capture.pdf.

114) Marcus Enoch (2002), "Recouping Public Transport Costs From Gains In Land Values," *Traffic Engineering and Control*, Vo. 43, No 9, pp. 336-340 (https://dspace.lboro.ac.uk/dspace-jspui/handle/2134/3418).

115) Mark J. Freeman and F.G. Price (1989), "Value Capture: A Neglected Factor in the Funding of Transport Facilities," *Reprint of paper prepared for the Annual Transportation Convention, Paper 5D-10, Roads and Transport Technology, No. 687. Pretoria*, South African Council for Scientific and Industrial Research, Division for Roads and Transport Technology.

116) Hsu, Kuo-Wei (1996), *The Impact of Mass Rapid Transit Systems on Land Values: Case Study, Taipei,* Chaoyang University, Taiwan. (Available from: secret@mail.cyut.edu.tw)

117) IEDC (2006), *Economic Development and Smart Growth: Case Studies on the Connections Between Smart Growth Development and Jobs, Wealth, and Quality of Life in Communities*, International Economic Development Council (www.iedconline.org); available at www.iedconline.org/Downloads/Smart_Growth.pdf. Evaluates the economic benefits of eight smart growth project case studies, including transit oriented development.

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125) Reconnecting America, *Hidden In Plain Sight: Capturing The Demand For Housing Near Transit*, Reconnecting America for the Federal Transit Administration (www.fta.dot.gov), 2004; at www.reconnectingamerica.org/html/TOD/newReport.htm. Market analysis finds a significant and growing portion of households value living near transit stations. Concludes that the market for TOD will exceed supply, resulting in price premiums near transit stations that provide appropriate amenities.

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128) TRB (2010), *Relationships Between Streetcars And The Built Environment*, TCRP Synthesis 86, Transportation Research Board (www.trb.org); at http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_syn_86.pdf.

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Transit Focused Development Website (www.peak.org/~jbs) provides detailed information resources related to Transit-Oriented Development.

Transit Oriented Development Website (www.transittown.org) disseminates best practices, case studies, tools and techniques, and other resources to TOD practitioners.

Transport Geography on the Web (www.people.hofstra.edu/geotrans) is an Internet site with information on transport planning and geography.

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Sharada R. Vadali (2014), *Using the Economic Value Created by Transportation to Fund Transportation: A Synthesis of Highway Practice*, NCHRP 459, Transportation Research Board (www.trb.org); at http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_syn_459.pdf.

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About the Authors

Jeffery J. Smith is the President of the Geonomy Society, a group of academics and activists who provide information about the impacts of the flow of natural rents on economies, societies, and the environment. An IRS 501(c)3, the group publishes *The Geonomist,* 3604 SE Morrison St, Portland OR 97214 USA. www.progress.org/geonomy jjs@geonomics.org.

Thomas A. Gihring is an international planning consultant based in Seattle, Washington. He previously taught graduate planning, and has since undertaken several studies in land value taxation and value capture. He recently drafted model planning enabling legislation for Bosnia-Herzegovina. E-mail: tagplan@gmail.com.

www.vtpi.org/smith.pdf

TORONTO

December 2013

City of Toronto

Development Charges

This pamphlet provides an overview of development charges in the City of Toronto and is intended to be used as a guide. Applicants should review the Development Charges By-law and the *Development Charges Act, 1997* and consult with Toronto Building staff for charges that may apply to specific land development projects.

Purpose of Development Charges

Development charges are imposed on land development and redevelopment projects to help pay for the capital costs of infrastructure that is needed to service new development.

Background

On October 11, 2013, City of Toronto Council passed Development Charges By-law 1347-2013 (the By-law) in accordance with the *Development Charges Act, 1997* (the Act). The By-law came into force on November 1, 2013 and imposes development charges on all new developments (residential and non-residential lands, buildings or structures) within the City of Toronto.

When Are Development Charges Payable?

Development charges imposed under the By-law are calculated, payable and collected on the date that an above grade building permit under the *Building Code Act* is issued in relation to a building or structure on the land to which the development charge applies.

Where a development charge applies to land in relation to which a building permit is required, no building permit will be issued until the development charge has been paid in full.

Services Included

Development charges help pay for growth-related capital costs for the following municipal services:

- Spadina Subway Extension
- Transit
- Roads and Related
- Water
- Sanitary Sewer
- Storm Water Management
- Parks and Recreation
- Library
- Subsidized Housing
- Police
- Fire
- Emergency Medical Services
- Development-Related Studies
- Civic Improvements
- Child Care
- Health
- Pedestrian Infrastructure

Is My Project Subject to Development Charges?

You may be required to pay development charges for land development or redevelopment projects, if you are:

- Constructing a new building
- Making an addition or alteration to an existing building that increases the number of residential units or the non-residential gross floor area
- Redeveloping a property or making interior alterations that result in a change of use to all or part of a building

Statement of the Treasurer

The Treasurer's Annual Statement, identifying opening and closing balances and development charges reserve fund transactions during the year, may be viewed by the public at toronto.ca or in the offices of the City Clerk at 100 Queen Street West, Toronto, Ontario, during regular business hours.

Indexing and Phase-in

Development charges imposed under the By-law are adjusted annually, without an amendment to the By-law on February 1 of each year, commencing February 1, 2014, in accordance with the most recent annual change in the Statistics Canada Quarterly Capital Expenditure Price Statistics, Catalogue Number 62-007-X.

Adopted development charges rates will be phased-in over the period November 1, 2013 to February 1, 2016. Consult the By-law for details.

Exemptions

Exemptions provided in the By-law and/or the Act include:

- Industrial uses, as defined
- Non-profit housing, as defined
- The City or a local board thereof as defined in the Act
- A board of education
- The creation of an additional dwelling unit, under the restrictions of 2 (3) (b) of the Act
- Land, buildings or structures used or to be used for a public hospital receiving aid under the *Public Hospitals Act*
- Land, buildings or structures owned by and used, or to be used, for a college or university as defined in section 171.1 of the *Education Act*
- Land, buildings or structures used or to be used for a place of worship, as defined, or for the purpose of a cemetery or burial ground
- Temporary sales offices or pavilions associated with the sale of new residential development to the public
- Land, buildings or structures for which the City has given final approval for a grant under the Imagination, Manufacturing, Innovation and Technology Financial Incentives Program adopted pursuant to a Community Improvement Plan within a Community Improvement Plan Area, as designated under section 28 of the Planning Act
- Accessory uses not greater than 10 square metres
- Dwelling rooms within a rooming house

Consult the By-law and the Act for the full list of exemptions.

Education Development Charges

The City of Toronto collects education development charges on behalf of the Toronto Catholic District School Board (TCDSB), as required by the Education Act. The TCDSB is responsible for setting the education development charge rates and applicable policies. Please review the Education Development Charges By-law at tcdsb.org

Note

If there is any discrepancy between this pamphlet and the By-Law, the By-Law prevails.

Residential Development Charges – Effective November 1, 2013

Service	Residential Charge By Unit Type					
	Singles & Semis	Multiples 2+ Bedrooms	Multiples 1 Bedroom and Bach.	Apartments 2 Bedrooms and Larger	Apartments 1 Bedroom and Bach.	Dwelling Room
Spadina Subway Extension	$1,549	$1,253	$667	$991	$667	$416
Transit (balance)	$5,069	$4,099	$2,181	$3,242	$2,181	$1,361
Parks and Recreation	$3,142	$2,541	$1,352	$2,010	$1,352	$844
Library	$882	$713	$380	$564	$380	$237
Subsidized Housing	$711	$574	$306	$454	$306	$191
Police	$412	$333	$177	$263	$177	$111
Fire	$193	$156	$83	$123	$83	$52
Emergency Medical Services	$108	$88	$47	$69	$47	$29
Development-related Studies	$148	$119	$64	$94	$64	$40
Civic Improvements	$120	$97	$52	$77	$52	$32
Child Care	$211	$170	$91	$135	$91	$57
Health	$33	$27	$14	$21	$14	$9
Pedestrian Infrastructure	$39	$31	$17	$25	$17	$10
Subtotal General Services	**$12,617**	**$10,201**	**$5,431**	**$8,068**	**$5,431**	**$3,389**
Roads and Related	$2,620	$2,118	$1,128	$1,675	$1,128	$703
Water	$2,136	$1,727	$919	$1,365	$919	$573
Sanitary Sewer	$1,610	$1,302	$693	$1,029	$693	$432
Storm Water Management	$429	$347	$185	$275	$185	$115
Subtotal Engineered Services	**$6,795**	**$5,494**	**$2,925**	**$4,344**	**$2,925**	**$1,823**
TOTAL CHARGE PER UNIT	**$19,412**	**$15,695**	**$8,356**	**$12,412**	**$8,356**	**$5,212**

Note: See below.

Non-Residential Development Charges – Effective November 1, 2013

Service	Non-Residential Charge per Square Metre
Spadina Subway Extension	$14.07
Transit (balance)	$46.74
Parks and Recreation	$3.06
Library	$0.86
Subsidized Housing	$0.00
Police	$3.80
Fire	$1.78
Emergency Medical Services	$1.01
Development-related Studies	$1.37
Civic Improvements	$1.10
Child Care	$1.94
Health	$0.31
Pedestrian Infrastructure	$2.87
Subtotal General Services	**$78.91**
Roads and Related	$24.03
Water	$19.55
Sanitary Sewer	$14.74
Storm Water Management	$3.93
Subtotal Engineered Services	**$62.25**
TOTAL CHARGE PER SQ.M.	**$141.16**

Note:

(1) The development charges described above shall be adjusted for indexing and phase-in. The current development charge rates are available on the City of Toronto website (toronto.ca/devcharges) or by contacting Toronto Building Division.

(2) Non-residential development charges apply only to the non-residential gross floor area that is located on the ground floor, as defined.

Why Build in Toronto?

- With a population of 2.8 million, Toronto is Canada's largest city and is the heart of the fifth largest city region in North America.
- The City of Toronto, with 23% of Ontario's jobs, accounts for 34% of new jobs in Ontario advertised on the Internet (Wanted Analytics, 12 month average, Oct 2013).
- One-quarter of Canada's population is located within 160 km (100 mi.) of the City and more than 60% of the population of the United States of America is within a 90-minute flight.
- Toronto's labour force (1.5 million people) is very well-educated and multi-lingual; more than a third of residents have a university degree and over 50% have at least a community college diploma.
- Toronto is the financial and business capital of Canada.
- More large Canadian corporations are headquartered here than in any other Canadian city. Sixty percent of Canadian companies in Fortune's Global 500 are in Toronto.
- The Toronto Stock Exchange is the third largest stock exchange in North America and the eighth largest in the world based on market capitalization.
- Toronto is the cultural and media capital of English Canada.
- It is the third largest English language live theatre market in the world and offers world class ballet, opera and symphony as well as six professional sports teams.
- Toronto is Canada's number one tourist destination.
- Toronto is a major global centre for research, higher education and specialized health care.
- Toronto is a safe and vibrant city. It has North America's largest public transit system after New York City and Mexico City and is served by the largest airport in Canada.
- For more information about investing in Toronto, visit toronto.ca/business.

Contact Information

For more information, please contact Toronto Building at:

North York District
5100 Yonge Street 416-395-7000

Toronto and East York District
100 Queen Street West 416-392-7539

Scarborough District
150 Borough Drive 416-396-7526

Etobicoke District
399 The West Mall 416-394-8002

Development Charges

TORONTO

Fiche pratique

Redevance pour création de bureaux ou de commerces en Île-de-France (RCB-IDF)

Vérifié le 18 février 2015 - Direction de l'information légale et administrative (Premier ministre), Ministère en charge de l'urbanisme

La construction de bureaux, locaux commerciaux ou de stockage, situés en Île-de-France, est soumise à une redevance, perçue à l'occasion de travaux de construction, reconstruction, rénovation, transformation ou agrandissement. Elle est due par les propriétaires, qu'ils soient particuliers, entreprises et organismes privés ou publics, d'un local imposable en pleine propriété, copropriété ou indivision, ou bien titulaires d'un droit réel sur un local imposable.

Locaux concernés et exclus

Les locaux taxables doivent être situés dans les 8 départements d'Île-de-France : Essonne (91), Hauts-de-Seine (92), Paris (75), Seine-et-Marne (77), Seine-Saint-Denis (93), Val-de-Marne (94), Val-d'Oise (95) et Yvelines (78).

Ne sont pas soumis à la redevance :

- les bureaux des professions libérales et officiers ministériels (notaires, huissiers...),
- les bureaux de moins de 1 000 m² dépendant d'un établissement industriel,
- les locaux de bureaux faisant partie d'un local principal d'habitation,
- les locaux situés en zone franche urbaine (ZFU) ou en zone de redynamisation urbaine (ZRU),
- les locaux affectés au service public, et appartenant à l'État, aux collectivités territoriales ou aux établissements publics ni industriels ni commerciaux,
- les locaux des associations reconnues d'utilité publique,
- les aires de stationnement et les espaces de circulation correspondants,
- les locaux destinés à la recherche ou à caractère social ou sanitaire.

En cas de reconstruction (avec un permis de construire délivré avant le 1er janvier 2014 ou une mise en recouvrement de la taxe émise à partir du 1er décembre 2014), seule la surface utile de plancher qui dépasse la surface initiale est taxable.

Attention :
cette redevance, due une seule fois, ne doit pas être confondue avec la taxe sur les bureaux (https://www.service-public.fr/professionnels-entreprises/vosdroits/F20668) qui doit être versée chaque année.

Montant de la taxe

Les tarifs de la redevance diffèrent selon la nature des locaux et la circonscription dans laquelle ils sont situés (sauf pour les locaux de stockage dont le tarif est unique). Le montant est fixé au mètre carré et varie chaque année en fonction de l'indice du coût de construction (ICC).

La région d'Île-de-France est découpée en 3 circonscriptions :

- 1e circonscription : Paris (75) et Hauts-de-Seine (92)
- 2e circonscription : Seine-Saint-Denis (93), Val-de-Marne (94) et les communes de Seine-et-Marne (77), des Yvelines (78), de l'Essonne (91) et du Val-d'Oise (95) qui font partie de l'unité urbaine de Paris
- 3e circonscription : les communes pouvant bénéficier de la DSUCS (dotation de solidarité urbaine et de cohésion sociale) et du FSRIF (fonds de solidarité des communes de la région Île-de-France), ainsi que les communes du 77, du 78, du 91 et du 95 non incluses dans l'unité urbaine de Paris. Voir Liste des communes éligibles à la DSUCS et au FSRIF (http://bofip.impots.gouv.fr/bofip/9441-PGP.html)

Tarifs 2015 par m² de construction

Types de locaux	1e circonscription	2e circonscription	3e circonscription
Bureaux	**368,95 €**	**229,52 €**	**92,24 €**
Locaux commerciaux	**128,71 €**	**80,44 €**	**32,18 €**
Locaux de stockage	**13,95 €**	**13,95 €**	**13,95 €**

Tarifs 2015 pour les communes ayant changé de circonscription en 2011 ou qui n'étaient pas dans la zone géographique de la taxe avant 2011

Zonage modifié entre 2010 et 2011	Tarif pour les bureaux
Hors circonscription à la 2e circonscription	**153,01 €**
De la 3e à la 1e circonscription	**266,30 €**

Tarifs 2015 dans les communes ayant perdu leur éligibilité à la DSU ou au FSRIF, impliquant un changement de zonage

Types de locaux	Changement de zonage	Changement de zonage en 2012	Changement de zonage en 2013	Changement de zonage en 2014
Bureaux	De la 3e à la 2e circonscription	**195,20 €**	**160,88 €**	**126,56 €**

Types de locaux	Changement de zonage	Changement de zonage en 2012	Changement de zonage en 2013	Changement de zonage en 2014
	De la 3e à la 1e circonscription	**299,77 €**	**230,59 €**	**161,42 €**
Locaux commerciaux	De la 3e à la 2e circonscription	**68,37 €**	**56,31 €**	**44,24 €**
	De la 3e à la 1e circonscription	**104,58 €**	**80,44 €**	**56,31 €**
Locaux de stockage	De la 3e à la 2e circonscription	**13,95 €**	**13,95 €**	**13,95 €**
	De la 3e à la 1e circonscription	**13,95 €**	**13,95 €**	**13,95 €**

Déclaration et paiement

Une déclaration pour le calcul de la redevance (cerfa n°14600*01 (https://www.service-public.fr/professionnels-entreprises/vosdroits/R14050)) doit être jointe à la demande de permis de construire.

Pour les constructions ne donnant pas lieu à permis de construire, la déclaration doit être directement adressée à la direction départementale en charge des territoires (DDT), ou à l'unité territoriale (UT) de la direction régionale pour Paris et la petite couronne (Hauts-de-Seine, Seine-Saint-Denis et Val-de-Marne).

L'avis de mise en recouvrement est émis dans les 2 ans qui suivent la délivrance du permis de construire, le dépôt de la déclaration préalable, ou à défaut le début des travaux.

Si l'avis de mise en recouvrement est émis avant l'achèvement de la construction, il peut être établi au nom du maître d'ouvrage qui peut en demander remboursement au propriétaire des locaux.

Dans le mois qui suit l'achèvement des travaux, une déclaration (cerfa n°46-0390 (https://www.service-public.fr/professionnels-entreprises/vosdroits/R14051)) doit être adressée par le maître d'ouvrage :

- soit à la mairie, s'il y a eu demande de permis de construire,
- soit à la direction départementale en charge des territoires (DDT), ou à l'unité territoriale (UT) de la direction régionale pour Paris et la petite couronne, pour des locaux ne nécessitant pas de permis de construire.

À noter :
si la surface de construction initialement déclarée n'a pas été entièrement construite, la redevance peut être réduite à la demande du redevable.

Services en ligne et formulaires

- Déclaration pour le calcul de la redevance relative à la création de bureaux et locaux commerciaux en Île-de-France (R14050)
  Formulaire
- Déclaration d'achèvement de travaux - Redevance pour la création de bureaux ou de locaux commerciaux (R14051)
  Formulaire

Où s'informer ?

Veuillez saisir le nom ou le code postal de la commune :

Ville ou code postal Rechercher

Mairie (https://lannuaire.service-public.fr/)
Pour déposer la déclaration avec la demande de permis de construire (sauf à Paris)
Service-public.fr

Direction départementale en charge des territoires (DDT ou DDTM) (https://lannuaire.service-public.fr/recherche?whoWhat=DDT+OR+DDTM&where=)
Pour les déclarations relatives à des projets ne nécessitant par le dépôt d'un permis de construire

Paris - Direction de l'urbanisme (http://www.paris.fr/services-et-infos-pratiques/urbanisme-et-architecture/demandes-d-autorisations/demarches-2094#vos-contacts_1)
Pour déposer la déclaration avec la demande de permis de construire (uniquement à Paris)
Ville de Paris

Textes de référence

- Code de l'urbanisme : articles L520-1 à L520-11 (http://legifrance.gouv.fr/affichCode.do?idSectionTA=LEGISCTA000006143330&cidTexte=LEGITEXT000006074075)
- Arrêté du 30 décembre 2014 relatif à l'actualisation annuelle des tarifs pour le calcul de la redevance pour la création de bureaux et de locaux commerciaux et pour la taxe d'aménagement (http://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000030046101)

Et aussi sur service-public.fr

- Taxe sur les bureaux en Île-de-France (https://www.service-public.fr/professionnels-entreprises/vosdroits/F20668)
  Fiscalité

Pour en savoir plus

Cartes des zones urbaines prioritaires (Zus, ZFU, PNRU, Cucs) (http://sig.ville.gouv.fr/Atlas)
Ministère en charge de la ville

- Communes comprises dans l'unité urbaine de Paris (http://www.insee.fr/fr/methodes/nomenclatures/zonages/zone.asp?zonage=UU2010&zone=00851)
Institut national de la statistique et des études économiques (Insee)

- Liste des communes éligibles à la DSUCS et au FSRIF (http://bofip.impots.gouv.fr/bofip/9441-PGP.html)
Ministère en charge des finances

Affaires municipales et Occupation du territoire
Québec

Guide La prise de décision en urbanisme

Outils de financement et de maîtrise foncière

Réserve pour fins publiques

Tout organisme autorisé par la loi à exproprier un bien (municipalité, régie intermunicipale) peut imposer une réserve sur ce bien. À part les réparations, la réserve prohibe, pendant sa durée, toute construction, amélioration ou addition sur l'immeuble qui en fait l'objet.

Utilité

L'exercice de ce pouvoir permet à la municipalité d'imposer, pendant la démarche de planification de l'aménagement du territoire, une réserve à des fins publiques pour une période initiale de deux ans et, sur renouvellement, pour une période de deux autres années.

L'exercice de ce pouvoir permet à la municipalité d'imposer, pendant la démarche de planification de l'aménagement du territoire, une réserve à des fins publiques pour une période initiale de deux ans et, sur renouvellement, pour une période de deux autres années. L'utilité de ce pouvoir réside dans la possibilité d'interdire des investissements de la part des propriétaires, investissements qui feraient augmenter les coûts éventuels d'acquisition par la municipalité.

Une municipalité pourrait imposer, par résolution, une réserve sur certains immeubles en bordure d'un cours d'eau dans le but d'en récupérer les berges pour y aménager un parc riverain et créer un réseau intégré d'accès publics aux plans d'eau situés sur son territoire.

De même, elle pourrait imposer une réserve sur certains immeubles du centre-ville afin d'y aménager des stationnements au bénéfice des commerçants, comme elle l'avait planifié dans son programme particulier d'urbanisme (PPU) en cours de préparation.

Enfin, le conseil d'une municipalité pourrait également décréter l'imposition d'une réserve sur un immeuble pour la construction éventuelle d'une rue publique permettant de joindre la rue principale à un stationnement desservant un centre commercial dont l'implantation et la construction sont projetées.

Caractéristiques

Dans ce domaine, les pouvoirs habilitants se trouvent principalement dans le Code municipal du Québec, la Loi sur les cités et villes et la Loi sur l'expropriation.

À part les réparations, la réserve prohibe, pendant sa durée, toute construction, amélioration ou addition sur l'immeuble qui en fait l'objet. Si l'immeuble est exproprié avant l'expiration de la réserve, l'évaluation de l'indemnité doit être établie en fonction de la date de l'expropriation, et ce, sans tenir compte de la plus-value qui est attribuable à l'imposition de la réserve, à l'expropriation ou à l'exécution des travaux publics faisant suite à l'expropriation.

La réserve peut aussi avoir pour objet l'imposition d'une servitude de non-accès ou d'une autre servitude réelle. Dans ce cas, le coût des dommages et intérêts résultant du préjudice causé par l'imposition ultérieure de la servitude est évalué en fonction de la date à laquelle la réserve est imposée.

Quiconque est autorisé par la loi à exproprier un immeuble peut décréter une réserve sur celui-ci, et ce, dans la même mesure et avec les mêmes autorisations que pour une expropriation.

Ainsi, tout comme pour l'expropriation, les conditions d'exercice sont strictes et formelles. Les avis de réserve doivent énoncer les véritables objectifs recherchés à défaut de quoi elles sont nulles. Le conseil municipal doit donc toujours spécifier les fins publiques pour lesquelles il impose une telle réserve. Le renouvellement d'une réserve ne peut faire l'objet d'une contestation.

Ici, « fin municipale » réfère à un objet pouvant être utile à une municipalité ou à une ville. Le fait que certains particuliers puissent profiter d'une telle réserve n'est pas incompatible avec l'intérêt public des citoyens (p. ex. les commerçants du centre-ville profitent du fait que la ville ait réservé des immeubles pour éventuellement y construire un stationnement public).

La municipalité ne peut imposer une réserve sur un immeuble faisant partie du domaine de l'état.

La signification de l'avis d'imposition de réserve se fait suivant les mêmes règles que la signification d'un avis d'expropriation.

Délai de nouvelle réserve

Un bien réservé pour fins publiques ne peut l'être à nouveau avant que ne se soit écoulée une période de deux ans à compter de l'expiration de la réserve précédente.

Expiration de la réserve et indemnité

L'immeuble peut être exproprié ou la réserve abandonnée avant la date d'expiration.

L'imposition d'une réserve peut donner lieu à une indemnité calculée d'après les dommages réellement subis et directement causés par cette imposition. Toutefois, l'indemnité ne peut inclure aucun montant relatif à l'utilisation que le propriétaire du bien réservé eût pu en faire si la réserve n'avait pas été imposée. Dans la fixation d'une indemnité de réserve ou d'expropriation, les constructions, améliorations ou additions effectuées après la date d'imposition, et ce, jusqu'à son expiration, n'entrent pas en ligne de compte. Il en va de même des baux consentis pendant que dure la réserve, dans la mesure où leur durée excède l'échéance de cette réserve.

Enfin, si l'immeuble est exproprié avant l'expiration de la réserve, l'évaluation de l'indemnité doit être établie en fonction de la date de l'expropriation.

L'imposition d'une réserve donne lieu à une indemnité qui se calcule d'après le préjudice réellement subi et directement causé par cette imposition. C'est le Tribunal administratif du Québec (TAQ) qui fixe l'indemnité totale à verser pour la valeur de tous les dommages résultant de la durée de la réserve (frais légaux, dommages réclamés à titre de troubles, ennuis et inconvénients).

Il appartient au TAQ de décider de toutes questions de droit et de fait dont la solution est requise pour fixer l'indemnité. La contestation du droit d'expropriation relève plutôt de la compétence de la Cour supérieure.

Références

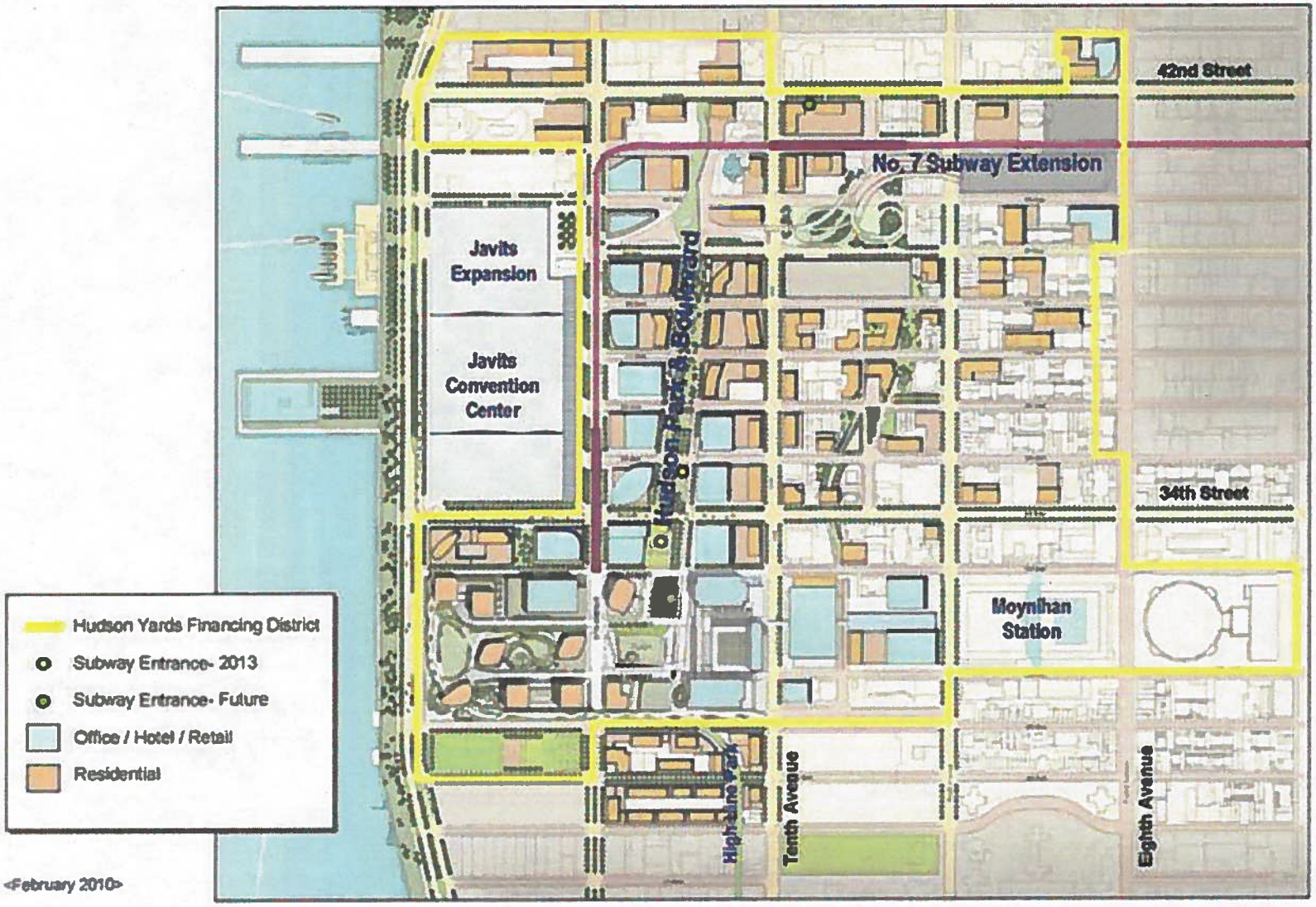
- Code municipal du Québec (chapitre C-27.1), article 1097 (pouvoirs d'expropriation).
- Loi sur les cités et villes (chapitre C-19), article 570 (pouvoirs d'expropriation).
- Loi sur l'expropriation (chapitre E-24), articles 69 à 89 (procédure et indemnité).
- Loi sur la justice administrative (chapitre J-3), article 32 et annexe II.

Québec

Financing the 7 Line Extension

11/30/2015

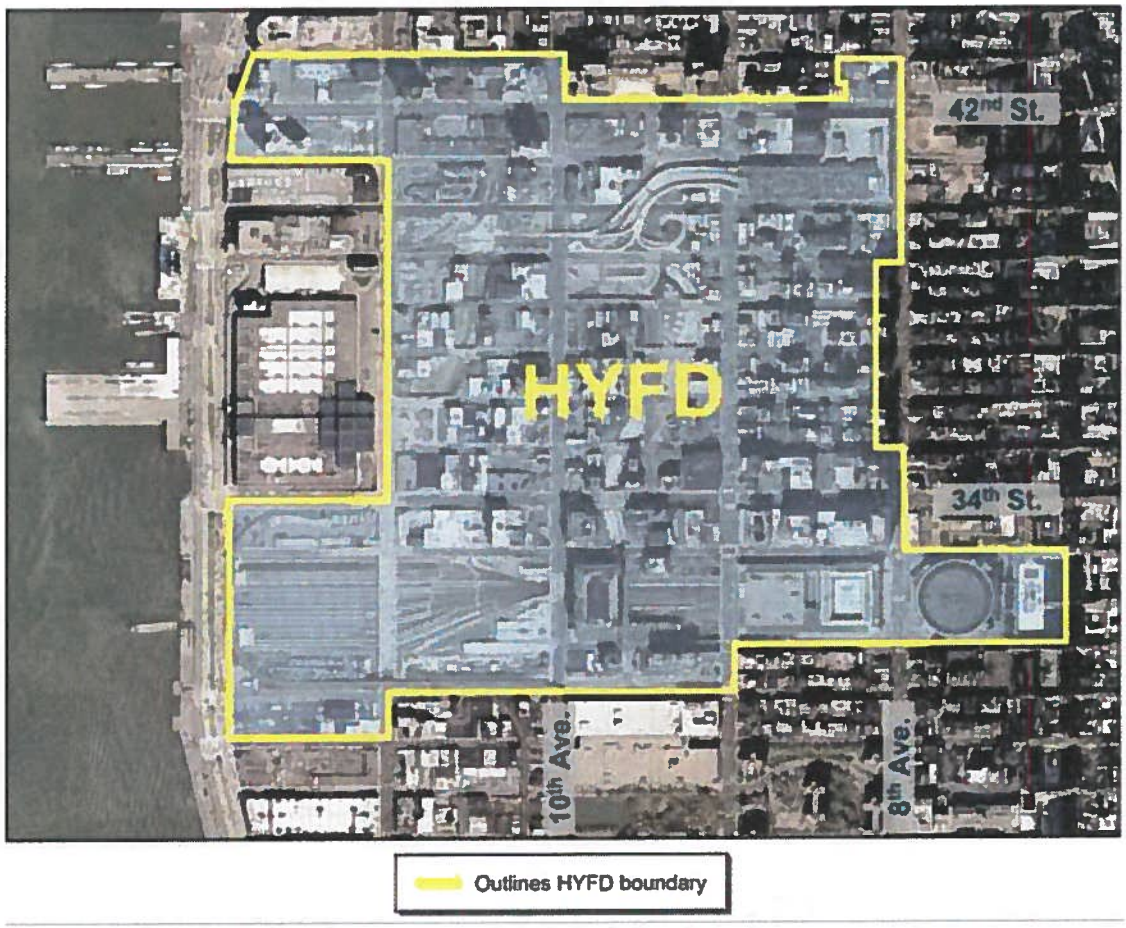
2006 Hudson Yards plan



Source: HYDC

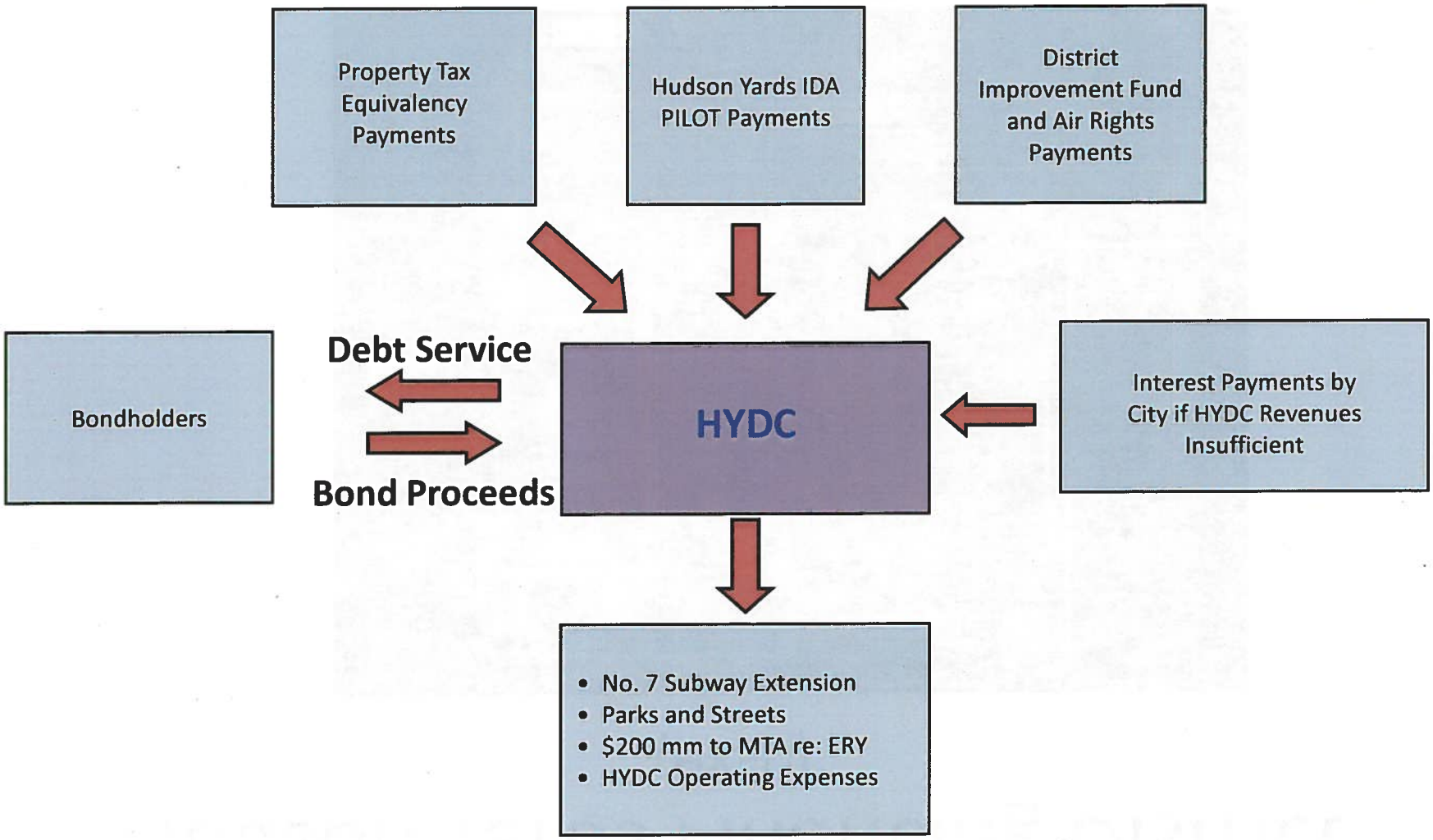
Hudson Yards Financing District

(HYFD)



The HYFD is the Area Bounded Generally by West 43rd Street, 7th & 8th Avenues, West 30th Street, and 11th & 12th Avenues

Hudson Yards Financing Structure

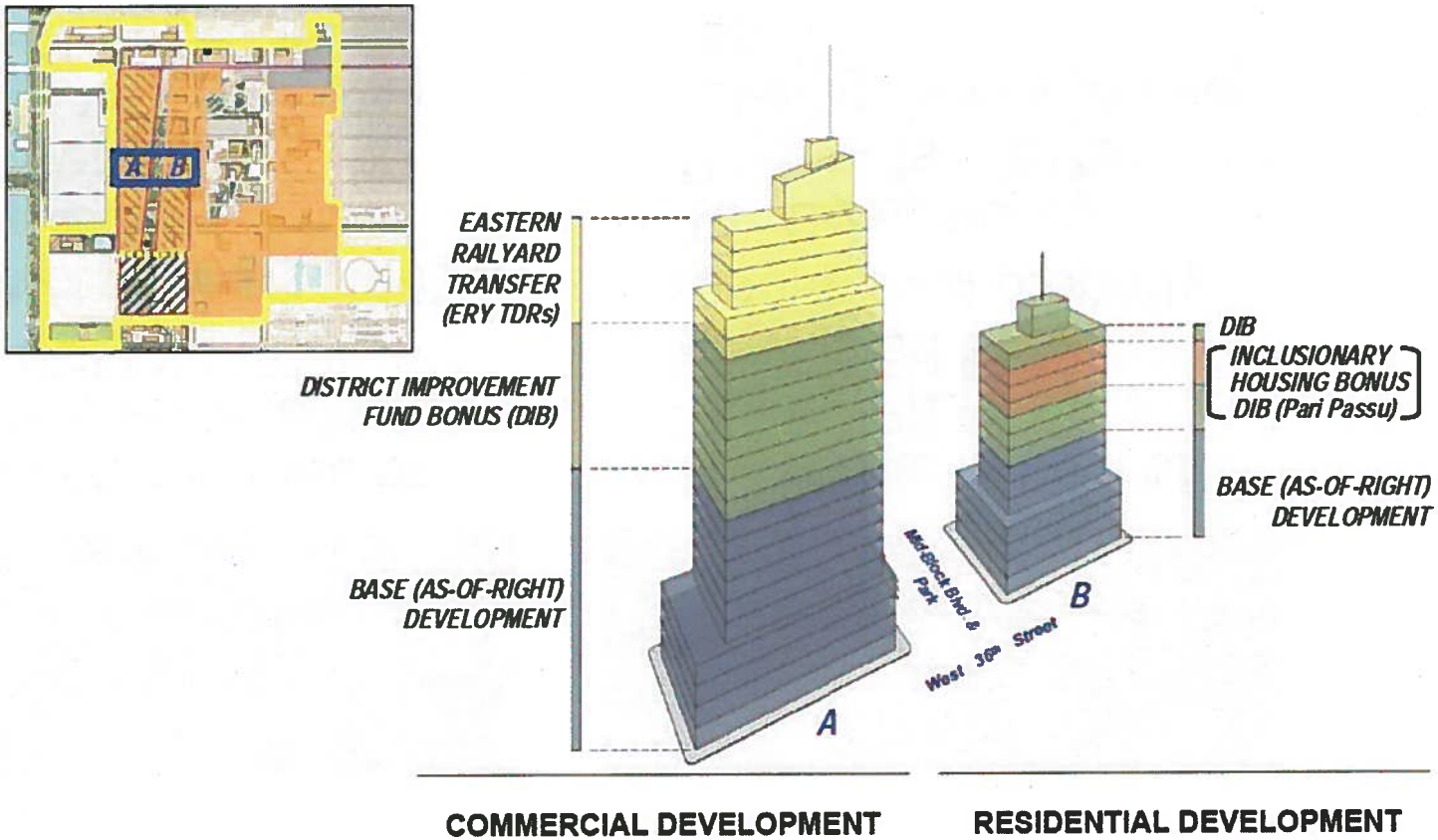


Source: HYDC

Revenue Sources

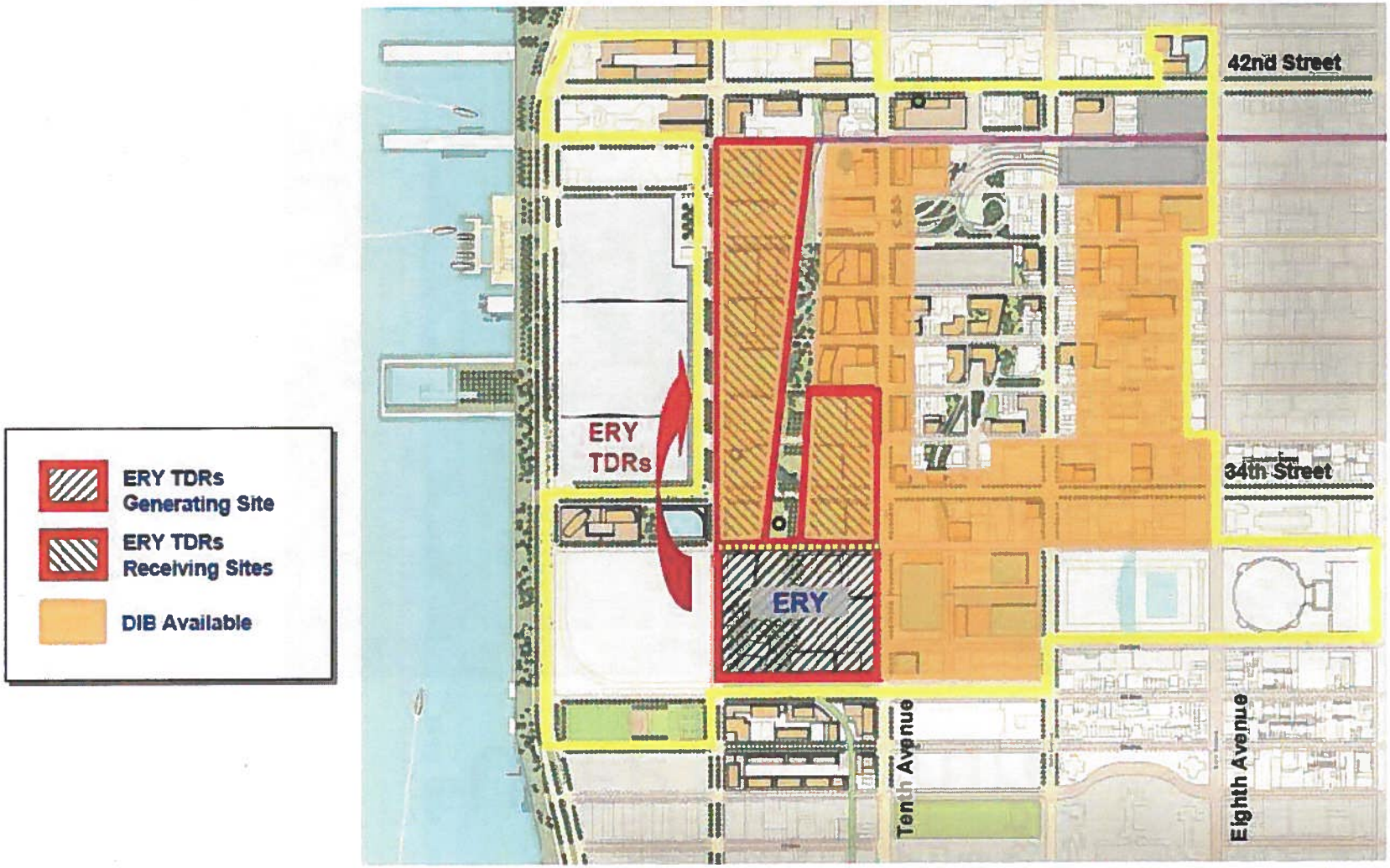
One Time Development Related Revenues	Recurring Property Tax Revenues
• Payments in Lieu of Mortgage Recording Tax (PILOMRTs) • District Improvement Fund Bonus (DIB) Payments • Sale of Eastern Rail Yard Transferable Development Rights (ERY TDRs)	• Payments in Lieu of Taxes (PILOTs) generated by commercial property • Tax Equivalency Payments (TEPs) relating mainly to new residential development – no "leakage"

One Time Development Revenues

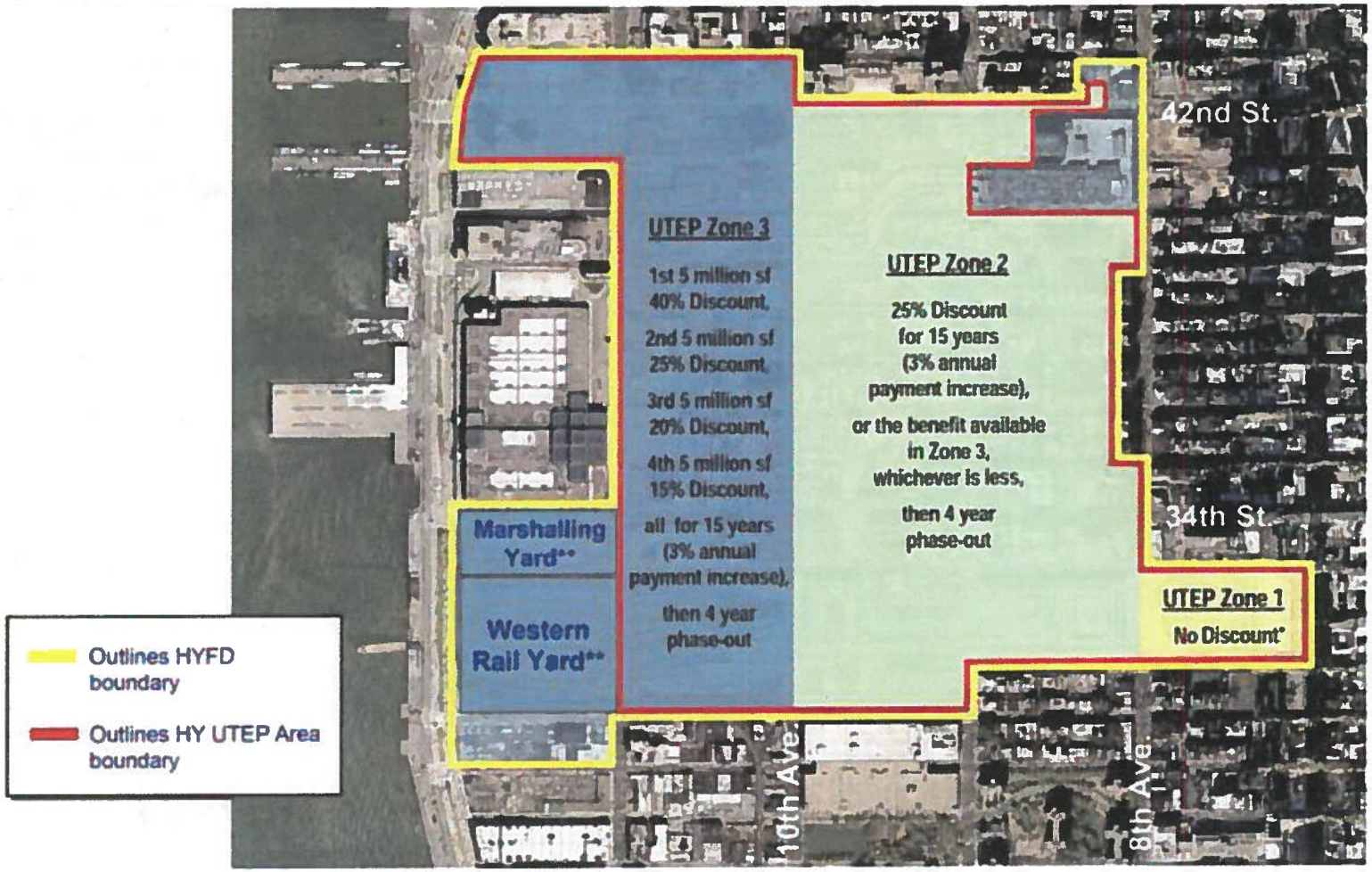


One Time Development Revenues

Mechanisms to Increase Density in Hudson Yards



UTEP Structure



Source: HYDC

Financial Support from City

- $3B of HYIC financing with adoption of Hudson Yards rezoning
  - Tax Equivalency Payments
  - Interest payments on Senior Bonds, designated Subordinate Bonds
- HYIC, HYDC and the City entered into Hudson Yards Support and Development Agreement
  - Continues until the repayment or other discharge of HYIC's bonds
- The Mayor is required to include in his executive budget
  - Projected amount of TEPs during City's next fiscal year
  - Amount equal to interest on the HYIC bonds covered by the agreement not projected to be met by other revenues of HYIC

Summary of HYIC Financial Performance FY 2006-2014

($ in thousands)	2006	2007	2008	2009	2010	2011	2012	2013	2014
Cash Receipts									
Payments in Lieu of Real Estate Taxes	–	–	–	–	–	–	–	–	–
Tax Equivalency Payments from City of New York	–	–	$8,800	$5,731	$13,318	$25,938	$27,679	$32,647	$38,553
District Improvement Bonus	$11,120	$52,330	12,538	4,488	–	4,635	2,951	3,261	10,827
Payments in Lieu of the Mortgage Recording Tax	–	–	–	–	–	–	–	11,097	13,873
Eastern Rail Yards Development Rights	–	–	–	–	–	–	–	–	–
Interest Support Payments from City of New York	–	–	–	–	–	42,667	79,347	–	38,130
Grant from the City of New York[2]	–	–	–	15,000	–	–	155,595	–	–
Interest Receipts	59	12,878	90,111	70,368	46,728	30,676	1,375	1,819	1,159
Other Revenue	–	–	–	–	–	–	–	3,075	2,206
Total Cash Receipts	**$11,179**	**$65,208**	**$111,449**	**$95,587**	**$60,046**	**$103,916**	**$266,947**	**$51,899**	**$104,748**
Cash Disbursements									
Operating	$1,500	$2,931	$594	$617	$4,844	$843	$458	$695	$435
Debt Service	–	–	112,125	97,500	97,500	97,500	140,393	122,624	143,848
Total Cash Disbursements	**$1,500**	**$2,931**	**$112,719**	**$98,117**	**$102,344**	**$98,343**	**$140,851**	**$123,319**	**$144,283**
Net Receipts / Disbursements	$9,679	$62,277	$(1,270)	$(2,530)	$(42,298)	$5,573	$126, 096	$(71,420)	$(39,535)
(Cash Basis Excluding Bond Proceeds)[1]									

Source: Goldman Sachs

Note: Fiscal Year ends June 30.
1 Unaudited.
2 This grant was made out of the City's year-end surplus resources and eliminated the need for the City to provide Interest Support Payments (ISPs) in the subsequent year.

Summary of Land Use and Financial Commitments

- Comprehensive rezoning adopted in January 2005
  - Commercial and residential development expansion of CBD
  - Transportation investments enable development

- Real property tax incentives adopted by the New York City Industrial Development Agency (IDA)

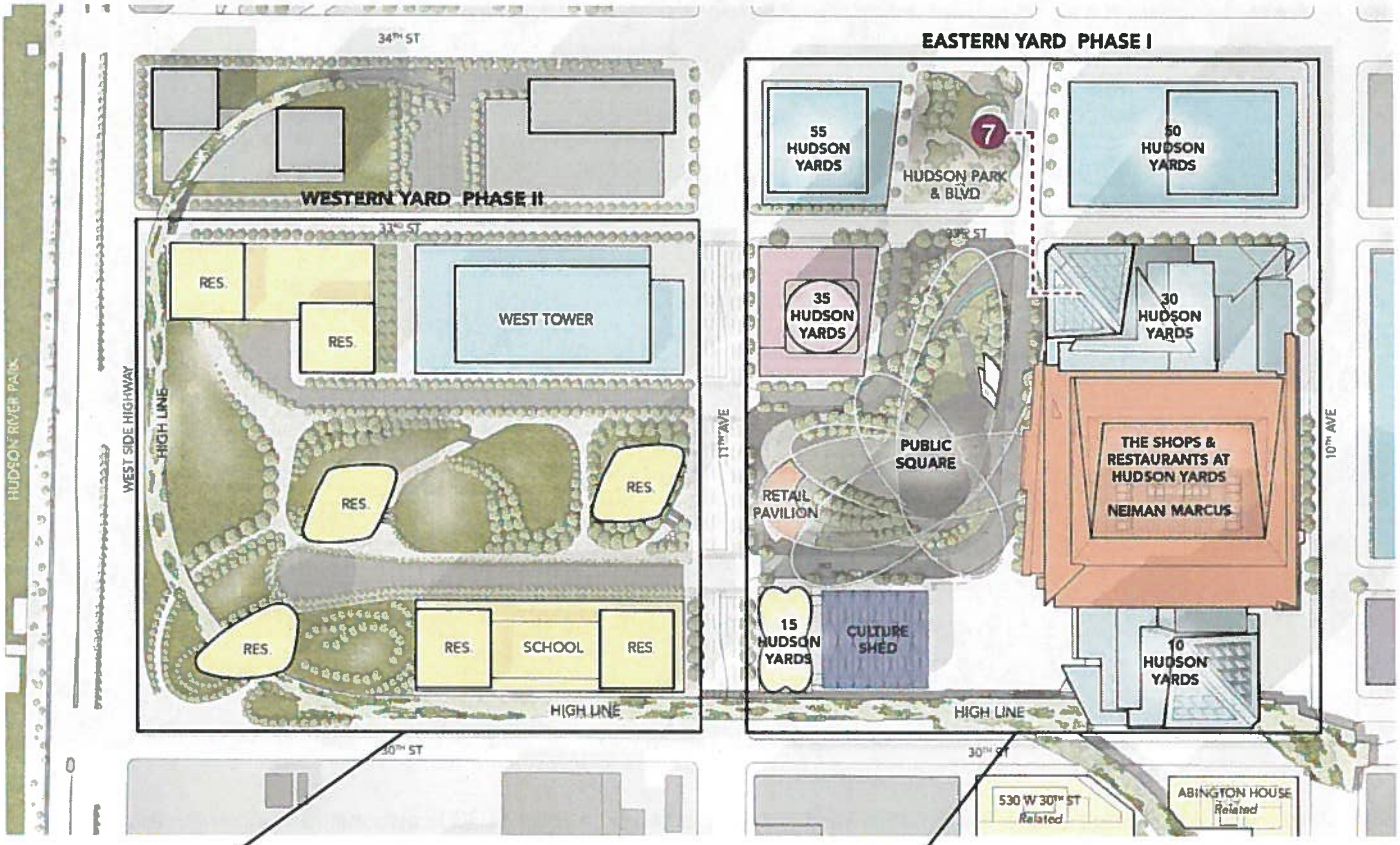
- $152.6M in Tax Equivalency Payments (TEPs) from City
  - Newly developments not subject to PILOT (mostly residential and hotel)

- NYC committed to pay interest in years when project revenues less than interest payments
  - From 2009-2014, $336.80M in interest support payments

MASTERPLAN
mixed-use

HUDSON YARDS

Hudson Yards is the largest private real estate development in the history of the United States and the largest development in New York City since Rockefeller Center. It is anticipated that more than 24 million people will visit Hudson Yards every year. The site will include more than 17 million square feet of commercial and residential space, more than 100 shops, a collection of restaurants, approximately 5,000 residences, a unique cultural space, 14 acres of public open space, a 750-seat public school and a 200-room Equinox® branded luxury hotel—all offering unparalleled amenities for residents, employees and guests. The development of Hudson Yards will create more than 23,000 construction jobs.



WESTERN YARD

Office	2,000,000
Residential	4,000,000
Retail	100,000
School	120,000
	6,220,000 GSF

EASTERN YARD

10 Hudson Yards	1,700,000
30 Hudson Yards	2,600,000
50 Hudson Yards	2,300,000
55 Hudson Yards	1,300,000
The Shops & Restaurants	1,000,000
Retail Pavilion	50,000
Hotel	220,000
Residential	1,870,000
Culture Shed	200,000
	11,240,000 GSF

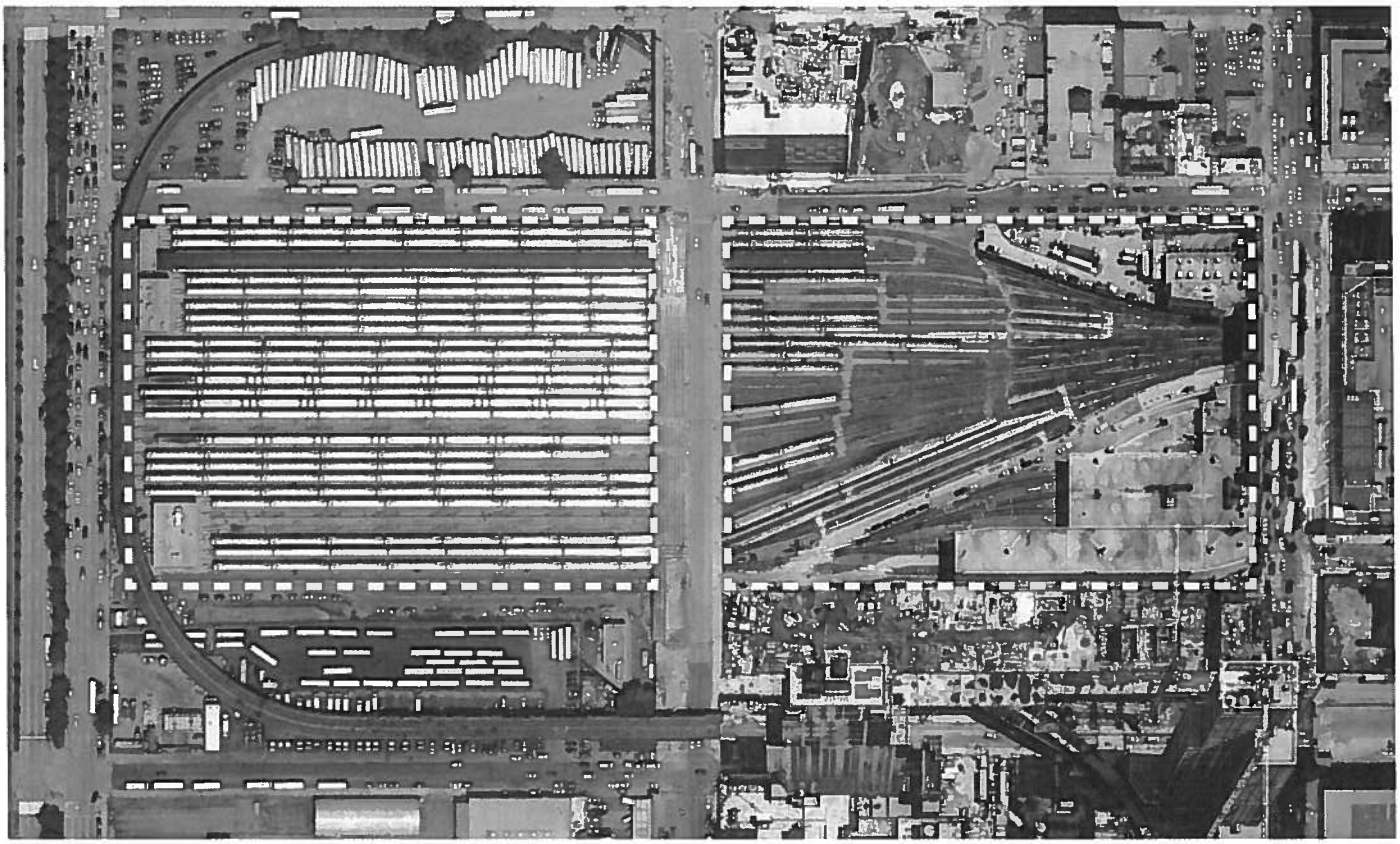
OFFICE RETAIL RESIDENTIAL HOTEL

OPEN SPACE: **14 ACRES** TOTAL: **17,460,000 GSF, 28 ACRES**

PLATFORM

HUDSON YARDS

To complete the 28-acre Hudson Yards development, two "platforms" must be constructed to bridge over 30 active Long Island Rail Road (LIRR) train tracks, three subsurface rail tunnels utilized by Amtrak and New Jersey Transit, and a fourth passageway, the Gateway tunnel, completed in late 2014. The finished buildings' foundations extend through the platform and rise above. The platforms will cover approximately three-quarters of the Eastern and Western Yards.



The platform and buildings above the Eastern Yard are supported by a total of 300 caissons, ranging from four to five feet in diameter and 20 to 80 feet in depth, which will be drilled deep into the bedrock in strategic locations between existing railroad tracks. The platform on the Eastern Yard utilizes 25,000 tons of steel, 14,000 cubic yards of concrete and weighs more than 35,000 tons.

Preliminary preparations on the Eastern Yard platform began at the end of 2013 and caisson drilling started in March 2014. Over seven million square feet of construction on Manhattan's West Side are underway at Hudson Yards. Erection of the structural steel columns, beams and trusses began in Fall 2014. The Eastern Yard platform will be completed in 2015.

Throughout all of the project's construction, the LIRR, Amtrak and New Jersey Transit trains will remain operational.

PLATFORM

SIZE: 10 ACRES • CONSTRUCTION: 2014 - 2015

ENGINEERS: THORNTON TOMASETTI, LANGAN ENGINEERING & ENVIRONMENTAL SERVICES, ARUP

10 HUDSON YARDS

Kohn Pedersen Fox Associates

HUDSON YARDS

10 Hudson Yards is located at the northwest corner of 30th Street and 10th Avenue. The 1.7-million-square-foot tower, designed by acclaimed global architects Kohn Pedersen Fox Associates (KPF) to meet LEED Platinum standards, will be 52 stories and stand 895 feet tall. It features panoramic views of the city and the Hudson River and offers floor-to-ceiling windows surrounding column-free interiors, designed to accommodate the modern high-density office environment.

Construction on 10 Hudson Yards began in December 2012 and the building will be completed in 2016. The tower has succeeded in attracting world-class fashion, technology and beauty brands, and will soon be home to Coach, Inc., L'Oréal USA, SAP and VaynerMedia.

Unique among Class A New York City office buildings, 10 Hudson Yards has a direct connection to the celebrated High Line. The tower bridges over the elevated park to create a dramatic 60-foot public passageway that extends through the building. It will also offer a direct connection to the Public Plaza.

KOHN PEDERSEN FOX ASSOCIATES (KPF) is one of the world's pre-eminent architecture firms, providing architecture, interior, programming and master-planning services for clients in the public and private sectors. Operating as one firm with six global offices, KPF is led by 23 Principals and 19 Directors. Its 600+ staff members come from 43 different countries, speak more than 30 languages and include more than 80 LEED-accredited professionals. KPF's diverse portfolio includes more than 70 designs that are certified or pursuing green-building certification, and is comprised of corporate, hospitality, residential, academic, civic, transportation and mixed-use projects located in more than 35 countries.

10 HUDSON YARDS

SIZE: 1.7M GSF • 52 STORIES • 895 FT. TALL

USE: COMMERCIAL OFFICE, RETAIL

CONSTRUCTION: 2012 - 2016

TENANTS: COACH L'ORÉAL SAP VAYNERMEDIA

15 HUDSON YARDS

Diller Scofidio + Renfro and Rockwell Group

HUDSON YARDS

Located at the northeast corner of 30th Street and 11th Avenue, 15 Hudson Yards will be the first residential building to open at Hudson Yards. Designed by Diller Scofidio + Renfro and Rockwell Group, in collaboration with Ismael Leyva Architects, 15 Hudson Yards will stand 910 feet tall and offer approximately 391 for-sale and rental residences in its 70 stories. The 960,000-square-foot LEED Gold-designed building will be adjacent to the High Line and directly connected to the Culture Shed, a multi-purpose venue offering seven levels of flexible gallery and performance space that will host a wide range of art, design and special events, including New York Fashion Week.

Notable for a unique tapered design that will reshape the West Side skyline, 15 Hudson Yards will offer its residents unobstructed views of the city and Hudson River. Residents will also have access to a number of in-building-only amenities, including a fitness center by Equinox®, 24/7 concierge-attended lobby, on-site parking garage along with valet and pet-friendly services.

Construction on 15 Hudson Yards began in the fall of 2014 and the building is expected to be completed in 2018.

DILLER SCOFIDIO + RENFRO is an interdisciplinary design studio that integrates architecture, visual arts and performing arts. The studio's commitment to merging art and architecture with issues of contemporary culture was recognized by the MacArthur Foundation with its "Genius" award, the first given in architecture. Projects include the Lincoln Center Redevelopment, the High Line, the Institute of Contemporary Art in Boston, Museum of Image & Sound in Rio de Janeiro, Berkeley Art Museum & Pacific Film Archive, Broad Art Museum in Los Angeles and Columbia University's new Medical Center and Business School. The studio has received numerous awards, including many of the most prestigious prizes in architecture.

ROCKWELL GROUP is an award-winning architectural firm dedicated to creating memorable environments inspired by all aspects of live theater. The firm's diverse portfolio of projects includes hotels, cultural centers, restaurants, playgrounds, set designs, art installations, festivals and product collections. These include W Hotels in New York, Paris and Singapore; The Blue School in New York; Imagination Playground; Walt Disney Family Museum; YOTEL New York at Times Square; Nobu restaurants and hotels; Montefiore Children's Hospital; Google projects internationally; Elinor Bunin Munroe Film Center at Lincoln Center; the Dolby Theatre, home of the Academy Awards ceremony; and Broadway musicals Hairspray, Legally Blonde, Catch Me if You Can and The Normal Heart, among others.

15 HUDSON YARDS

SIZE: 960,000 GSF • 70 STORIES • 910 FT. TALL

USE: RESIDENTIAL

CONSTRUCTION: 2014 - 2018

30 HUDSON YARDS

Kohn Pedersen Fox Associates

HUDSON YARDS

30 Hudson Yards is located at the southwest corner of 33rd Street and 10th Avenue and will be completed in 2019. The 2.6-million-square-foot tower designed by Bill Pedersen of Kohn Pedersen Fox Associates (KPF) will be the second-tallest office building in New York, taller than the Empire State Building and home to the highest outdoor observation deck in the city. The 90-story, LEED Gold-designed building will stand 1,296 feet tall and feature river-to-river panoramic views, outdoor terraces, a dramatic triple-height lobby, direct access to premier restaurants and retailers and a direct underground connection to the new No. 7 Subway station.

Time Warner Inc., a global leader in media and entertainment with businesses in television networks, film and TV entertainment and publishing, has already acquired more than one million square feet of office space at 30 Hudson Yards and plans to move approximately 5,000 employees from its corporate operations as well as its CNN, HBO, Turner Broadcasting and Warner Bros. entities - consolidating the divisions under one roof for the first time.

Unmatched by any new construction, 30 Hudson Yards will feature the most efficient large floor plans in New York City, cutting-edge communications systems for tenants and unparalleled amenities for workers.

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30 HUDSON YARDS

SIZE: 2.6M GSF • 90 STORIES • 1296 FT. TALL

USE: COMMERCIAL OFFICE

CONSTRUCTION: 2014 - 2019

TENANTS: TimeWarner HBO CNN

35 HUDSON YARDS

David M. Childs / Skidmore, Owings & Merrill

HUDSON YARDS

35 Hudson Yards is located at the southeast corner of 33rd Street and 11th Avenue. The 1.1-million-square-foot mixed-use tower, designed by David Childs and Skidmore Owings & Merrill, will feature approximately 137 exclusive for-sale residences, a 200-room Equinox® branded luxury hotel, a world-class 60,000 square foot Equinox® fitness club and spa, first class office space and ground floor retail space. Standing 1,000 feet tall, 35 Hudson Yards will be the tallest residential building at Hudson Yards, offering never-before-seen views from Manhattan's West Side.

Residents living at 35 Hudson Yards will benefit from hotel-style amenities with superior services and on-site concierge staff. Residents will also be surrounded by parks and playgrounds with direct access to the High Line and Hudson Park & Boulevard; exciting shopping, dining, nightlife and cultural events in Hudson Yards; and the variety of entertainment options in the surrounding Chelsea and Midtown neighborhoods.

DAVID M. CHILDS - FAIA is the Chairman Emeritus of Skidmore, Owings & Merrill. He continues to serve as a consulting designer on selected projects in SOM's New York office. Mr. Childs is the designer of One World Trade Center (formerly named the Freedom Tower). He is also working on the new Moynihan Station. Mr. Childs has juried, often as Chairman, numerous local and national design awards; participated as a visiting critic or studio leader at leading professional schools of architecture; and been a lecturer or panelist at myriad conferences and symposia. His design work has been widely published locally, nationally and internationally.

35 HUDSON YARDS

SIZE: 1.1M GSF • 70 STORIES • 1000 FT. TALL

USE: HOTEL, RESIDENTIAL, RETAIL, OFFICE, FITNESS CLUB & SPA

CONSTRUCTION: 2014 - 2019

55 HUDSON YARDS

A. Eugene Kohn / Kevin Roche / Kohn Pedersen Fox Associates

HUDSON YARDS

55 Hudson Yards, a 1.3-million-square-foot office building located at the intersection of Hudson Yards, the High Line and Hudson Park & Boulevard, is the newest addition to the collection of towers to be located at Hudson Yards. The LEED Gold-designed building will stand 51 stories high and 780 feet tall. The entrance to the building is just across from the new No. 7 Subway station. The building is under construction and space will be delivered to tenants in 2017 with move-in's in mid-2018.

The conceptual design of the building was an unprecedented joint venture of A. Eugene Kohn of Kohn Pedersen Fox (KPF) and Pritzker Prize-winning architect Kevin Roche; KPF served as the Design Architect.

55 Hudson Yards is the southwestern anchor of the new Hudson Park and is one of the only office buildings in the entire city to have a lobby that opens directly onto a park. The architects further enhanced the appeal of this great outdoor space by designing a dramatic outdoor terrace overlooking the park on the building's tenth floor. The building's design also provides future tenants the opportunity to carve private, double-height terraces into the tower in flexible locations.

The revitalized High Line district, the manufactured cast iron façades of the SoHo commercial buildings and the best of early modernism have inspired the façade of 55 Hudson Yards. The matte metal and stepped articulation of the window frames present a strong and solid exterior appearance, which is modern but uniquely New York in character. While the building references the solid exterior of the city's classic cast iron buildings, it also shares their expansive floor to ceiling windows to maximize interior light.

KOHN PEDERSEN FOX ASSOCIATES (KPF) is one of the world's pre-eminent architecture firms, providing architecture, interior, programming and master-planning services for clients in the public and private sectors. Operating as one firm with six global offices, KPF is led by 23 Principals and 19 Directors. Its 600+ staff members come from 43 different countries, speak more than 30 languages and include better than 80 LEED-accredited professionals. KPF's diverse portfolio, which includes more than 70 designs that are certified or pursuing green-building certification, and is comprised of corporate, hospitality, residential, academic, civic, transportation and mixed-use projects located in more than 35 countries.

55 HUDSON YARDS

SIZE: 1.3M GSF • 51 STORIES • 780 FT. TALL

USE: COMMERCIAL OFFICE

CONSTRUCTION: 2015 - 2017

TENANTS:

BOIES, SCHILLER & FLEXNER LLP

THE SHOPS & RESTAURANTS AT HUDSON YARDS

Elkus Manfredi Architects

HUDSON YARDS

The Shops & Restaurants at Hudson Yards, situated between 10 and 30 Hudson Yards, will be one of New York City's premier locations for fashion and dining, setting a new benchmark for shopping in a dynamic, mixed-used setting.

The 1,000,000-square-foot retail center will present to visitors and residents a carefully curated collection of top brands through its 100-plus shops and New York City's first Neiman Marcus. The Restaurants, curated by Chef Thomas Keller and restaurateur and developer Kenneth Himmel, will bring together a collection of New York's most celebrated cuisine.

Designed by Elkus Manfredi Architects as a captivating interior space, as well as a vantage point for viewing the Public Square, this multi-level retail center will become a quintessential New York experience. The Shops will also offer convenient access to the High Line and the new No. 7 Subway station.

HOWARD ELKUS - FAIA, an internationally acclaimed architect and urban designer, has been responsible for the design of many of the country's most exciting and game-changing mixed-use projects. Since co-founding Elkus Manfredi Architects in 1988, Mr. Elkus' visionary work has consistently broken new ground. He is noted for large-scale urban mixed-use developments, including Boston's Copley Place, Chicago's 730 North Michigan Avenue Peninsula Hotel block, Seattle's Pacific Place, The Paramount in San Francisco, CityPlace in West Palm Beach and, most recently, the 27-acre, 17-million-square-foot Miami World Center. Characteristic of all these projects is the planning and design of exciting urban retail centers exemplified in The Shops at Columbus Circle at Time Warner Center and the remaking of Boston's famed Faneuil Hall Marketplace. Mr. Elkus' current international work includes major mixed-use projects on prominent sites in Abu Dhabi, Istanbul, Toronto and Montreal, as well as a new town in the center of Israel.

THE SHOPS & RESTAURANTS AT HUDSON YARDS

SIZE: 1M GSF • 7 LEVELS • USE: RETAIL, FOOD & BEVERAGE

CONSTRUCTION: 2014 - 2018

THE PUBLIC SQUARE

Nelson Byrd Woltz Landscape Architects
in collaboration with Heatherwick Studio

HUDSON YARDS

Hudson Yards will include more than six acres of gardens and public plazas on its Eastern Yard, centered around a major piece of public art. Designed by Nelson Byrd Woltz Landscape Architects in collaboration with Heatherwick Studio, the Pulic Square will welcome New Yorkers and visitors alike to a new vibrant urban landscape at the heart of the growing West Side. With direct connections to the celebrated High Line and new Hudson Park & Boulevard, Hudson Yards will sit at the center of a sweeping collection of parks that will ultimately run from Gansevoort Street to Times Square.

The Public Square will serve as an urban stage, celebrating the energy of the city with space for events, exhibitions and gatherings. From the new No. 7 Subway station, visitors will be greeted by a seasonally expressive Entry Garden, while the southern edge of the Plaza will offer a canopy of trees in its Pavilion Grove, creating the perfect place for lunchtime gathering or evening meals. A plaza at 10th Avenue and 30th Street will feature a fountain, birch tree grove and a stonework installation recalling Manhattan geology along with a major entrance to the High Line.

Beyond hardscape and planting design, the landscape platform itself is a technical innovation. Serving as a ventilating cover over the working rail yards, the platform is engineered to support large-scale plantings and serve as a reservoir for site storm-water management and reuse.

THOMAS WOLTZ is the owner of Nelson Byrd Woltz Landscape Architects (NBW) with offices in New York City, Charlottesville VA, and San Francisco. During the past 20 years, Woltz and his staff have forged a body of work that integrates the beauty and function of built form and craftsmanship with an understanding of complex biological systems and restoration ecology yielding hundreds of acres of reconstructed wetlands, reforested land, native meadows and flourishing wildlife habitat. Currently NBW is entrusted with the design of eight major public parks across the US, Canada and New Zealand. The firm's work has been recognized with over 80 national and international awards and published widely. In 2011, Thomas Woltz was invested into the American Society of Landscape Architects Council of Fellows, among the highest honors achieved in the profession, and in 2013, named Design Innovator of the Year by the Wall Street Journal Magazine.

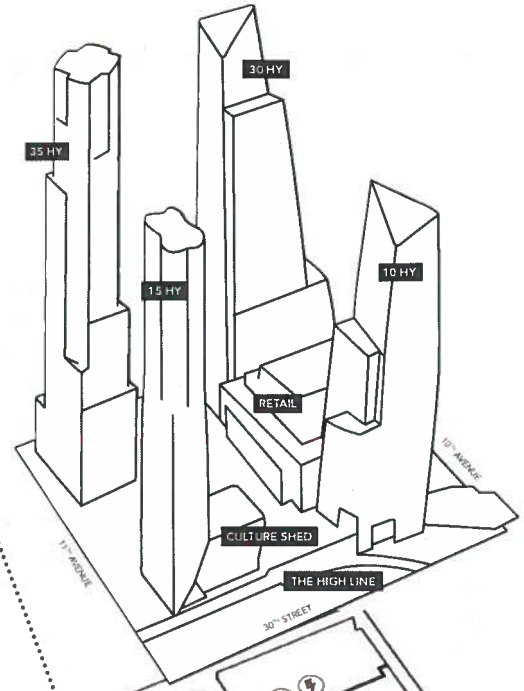
HEATHERWICK STUDIO, established by Thomas Heatherwick in 1994, is recognized for its work in architecture, urban infrastructure, sculpture, design and strategic thinking. Today, a team of 180—including architects, designers and makers—work from a combined studio and workshop in Kings Cross, London. At the heart of the studio's work is a profound commitment to finding innovative design solutions, with a dedication to artistic thinking and the latent potential of materials and craftsmanship. This goal is achieved through a working methodology of collaborative rational inquiry, undertaken in a spirit of curiosity and experimentation.

6.5 ACRES OF OPEN SPACE • GRAND PLAZAS • LUSH GARDENS • PAVILION GROVE
CONSTRUCTION: 2014 - 2018

HUDSON YARDS

ENGINEERED CITY

Hudson Yards will be far more than a collection of tall towers and open spaces. It will be a model for the 21st century urban experience, an unprecedented integration of buildings, streets, parks, utilities and public spaces that will combine to form the most connected, clean, reliable, efficient and responsive neighborhood ever.



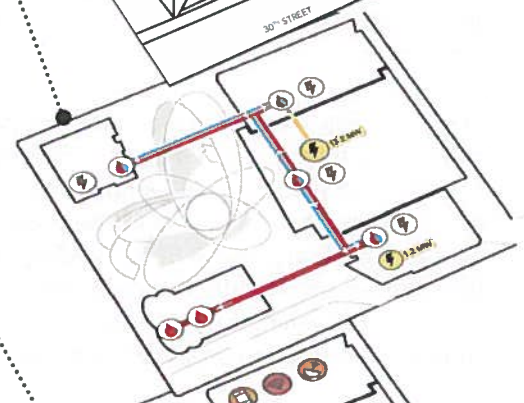
RELIABLE + EFFICIENT NEIGHBORHOOD

Whatever the disruption—super storm, brown out—Hudson Yards will have the onsite power-generation capacity to keep basic building services, residences and restaurants running. It doesn't hurt that being built above a rail yard means our first level is well above the flood plain.

- **14.4 megawatts of cogen**
- **15 megawatts of Tier 4 diesel generators**

Buildings at Hudson Yards are connected through a micro grid allowing them to be heated and cooled with their own equipment, or that of their neighbor. If on a Sunday, air conditioning is needed for just a few occupants in an office building, it can come from the already-active retail center rather than powering-up the entire commercial tower's cooling plant. And data from an energy management system will be used to generate, buy and conserve power across the neighborhood.

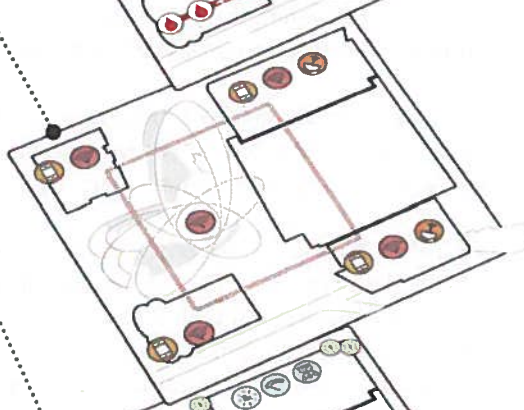
- **Hot/Chilled water plant**
- **Micro-grid, hot/chilled water line**



CONNECTED NEIGHBORHOOD

Communications will be supported by a future-proofed fiber loop, designed to optimize data speed and service continuity for rooftop communications, as well as mobile, cellular and two-way radio communications. This will allow continuous access via wired and wireless broadband performance from any device at any on-site location.

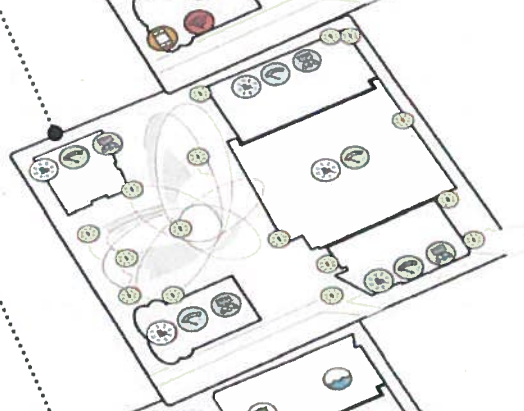
- **Digital antennae service (DAS) for cellular and two-way radio**
- **Rooftop satellite**
- **Wireless responders**
- **Fiber Loop**



RESPONSIVE NEIGHBORHOOD

Hudson Yards will harness big data to innovate, optimize, enhance and personalize the employee, resident and visitor experience. Supported by an advanced technology platform, operations managers will monitor and react to pedestrian traffic patterns, air quality, power demands, temperature and pedestrian flow to create the most efficiently navigated and environmentally attuned neighborhood in New York.

- **Building data-capture sensors (systems, equipment)**
- **Electrical and thermal sub-metering**
- **Environmental sensors (air, noise, other environmental factors)**
- **Advanced technology platform**



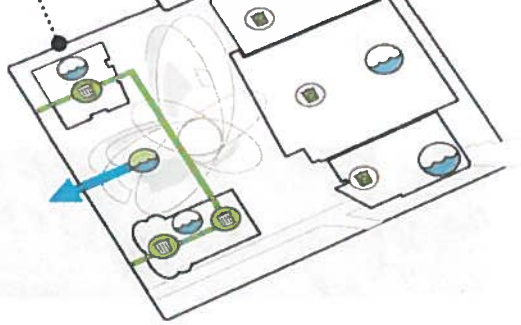
CLEAN + RESONPSIBLE NEIGHBORHOOD

The waste-management systems are designed to keep garbage out of sight. A vacuum-tube system that will accommodate three waste streams (organics, recyclables and trash) will send retail and residential waste straight from chutes on each floor to a central terminal—eliminating piles of garbage on sidewalks and considerable trash hauler traffic. Meanwhile, food-service organic waste will be converted to dry fertilizer at 10% of its initial weight and size.

- **Three-stream (organic/recyclable/landfill) waste-vacuum system**
- **Organic-waste disposal system**

Rainwater will be managed to maximize economic efficiency and minimize reliance on municipal sewers. Nearly 10 million gallons of storm water will be collected annually from building roofs and public plazas, then filtered and reused in mechanical and irrigation systems. In all, more than 90% of incident rainwater will be utilized in this way, meeting 100% of site irrigation demand internally.

- **Building Stormwater System**
- **Plaza Stormwater System**
- **Stormwater to River**

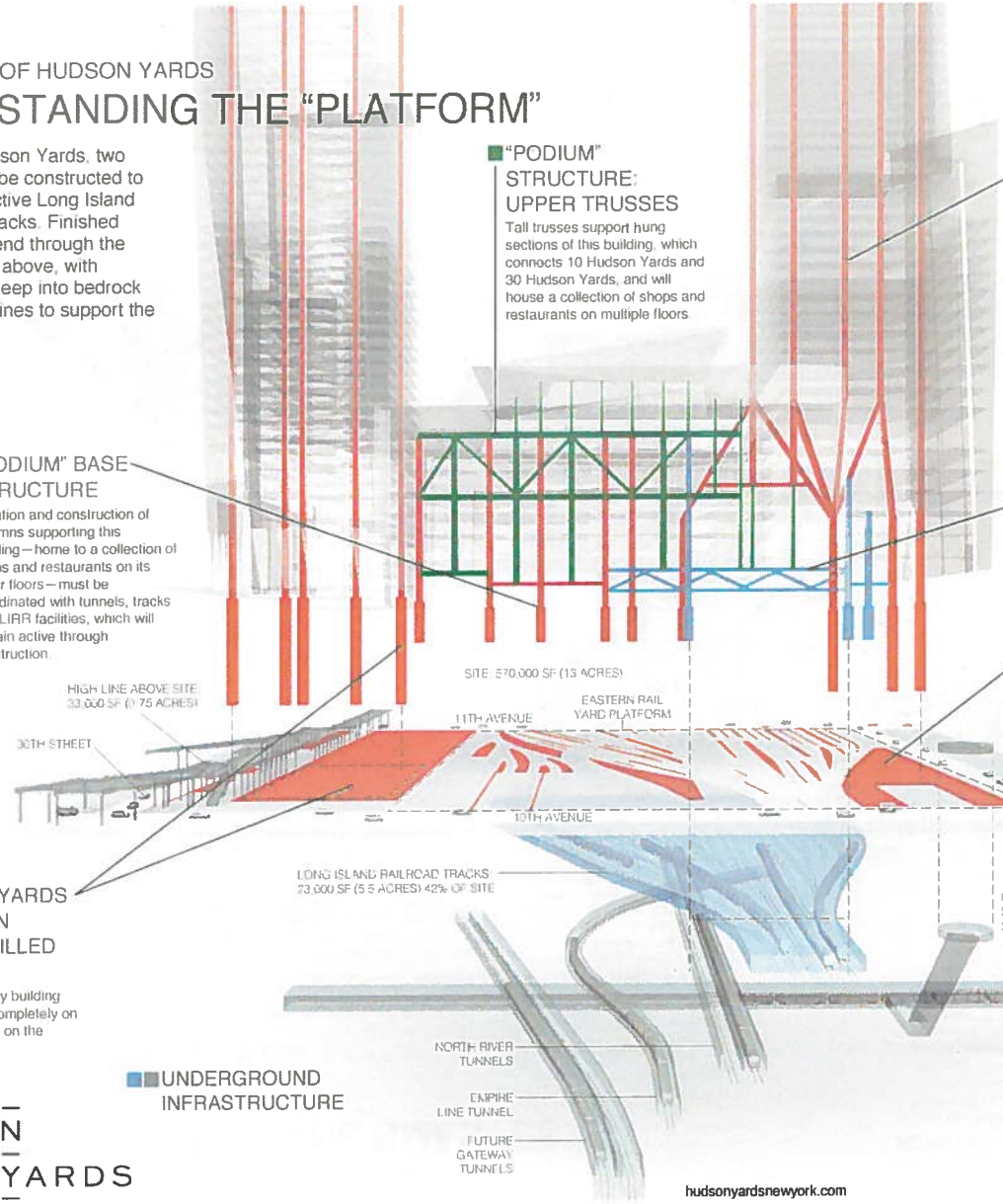


HudsonYardsNewYork.com

THE MAKING OF HUDSON YARDS

UNDERSTANDING THE "PLATFORM"

To complete Hudson Yards, two "platforms" must be constructed to bridge over 30 active Long Island Rail Road train tracks. Finished buildings will extend through the platform and rise above, with caissons drilled deep into bedrock between the rail lines to support the structures.



"PODIUM" STRUCTURE: UPPER TRUSSES

Tall trusses support hung sections of this building, which connects 10 Hudson Yards and 30 Hudson Yards, and will house a collection of shops and restaurants on multiple floors.

30 HUDSON YARDS

Columns and other support structures land between the rail lines—and are placed to avoid underground utilities—while trusses supporting the tower's south face span the tracks.

"PODIUM" BASE STRUCTURE

Location and construction of columns supporting this building—home to a collection of shops and restaurants on its lower floors—must be coordinated with tunnels, tracks and LIRR facilities, which will remain active through construction.

STRUCTURE OVER THE YARDS

Trusses must bridge over this narrow section of the rail yard.

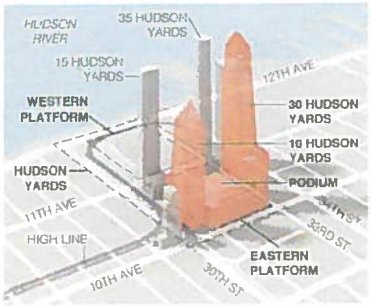
BUILDABLE AREAS

Due to the location of tracks, underground tunnels and utilities, only 38% of the site can be used to support structures.

10 HUDSON YARDS FOUNDATION SYSTEM: DRILLED CAISSONS

This tower is the only building being constructed completely on terra firma—and not on the platform.

UNDERGROUND INFRASTRUCTURE



Glossary

10 Hudson Yards. A 52-story (1.7 million square foot) office tower on the corner of 10th Avenue and West 30th Street that will house the world headquarters of Coach, Inc. and the North American HQ's of L'Oreal USA and SAP.

30 Hudson Yards. A 90-story office tower (2.6 million square feet) on the corner of 10th Avenue and West 33rd Street. At 1,296 feet, the tower, headquarters for Time Warner, Inc., will be the second-tallest office building in New York City.

Caisson. A large-diameter pipe drilled into rock and filled with concrete. At Hudson Yards, more than 300 caissons will be installed to support buildings and the platform.

Eastern Rail Yard Platform. A 10-acre deck being built above Hudson Yards. It will support six acres of open space, four towers, a culture center and 1 million square feet of shops and restaurants.

Empire Line. Amtrak rail line that runs along Manhattan's west side, linking Penn Station to Albany.

Gateway Project. Amtrak's plan to build two new rail tunnels under the Hudson River to connect Penn Station and the Northeast Corridor. A concrete shell has been installed below Hudson Yards to secure a path for the tunnels.

Hudson Yards. The 28-acre rail yard—framed by West 30th Street to the south, West 33rd Street to the north, 10th Avenue to the east and 12th Avenue to the west—where LIRR trains are "parked" between runs. The yard also includes an indoor maintenance shop, 12-car-long cleaning platform and various employee-support facilities.

LIRR. Long Island Rail Road commuter system, North America's busiest. It transports 350,000 riders daily.

No. 7 Subway Extension. A 1.5-mile extension to the Flushing (Queens) line, moving its final stop from Times Square to Hudson Yards. The project opened in September 2015 and will be able to accommodate more than 42,000 commuters during peak times.

North River Tunnels. Built in 1904 as part of the original Pennsylvania Station project, today these two passages tunnel 445 trains and more than 600,000 riders daily.

Truss. A structural system of beams, bars or rods that support a roof or bridge.

HUDSON YARDS

hudsonyardsnewyork.com

THE MAKING OF HUDSON YARDS

THE PUBLIC SQUARE–THE SMARTEST PARK IN TOWN

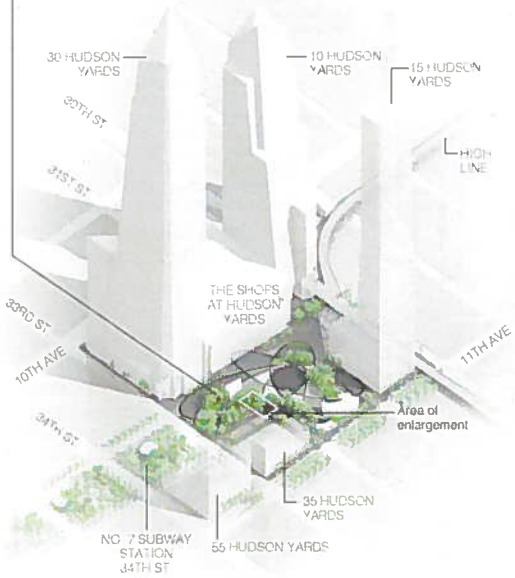
New York's next elevated park growing over the Yards

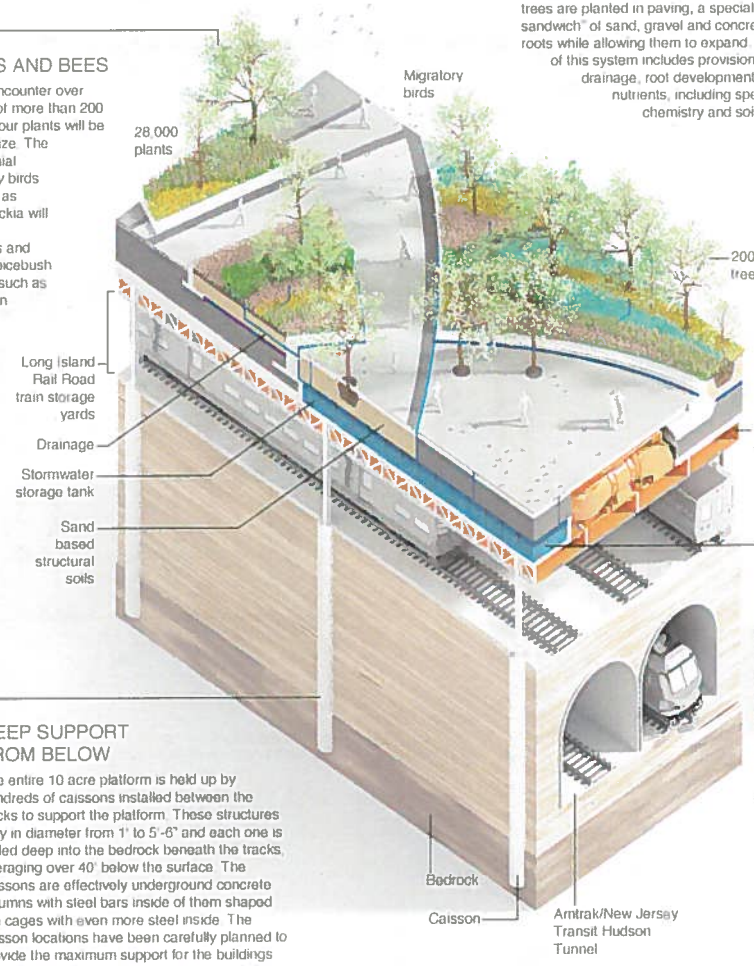
NEW YORK'S "OTHER" ELEVATED PARK

Built over the rail yards with jet engines, super chilled roots, a forest of trees and smart soil, the Hudson Yards Public Square will be a park unlike any other in New York. A sophisticated layer cake of utilities and materials are being employed between the Platform and the Plaza to allow for the lush plantings above. An expansive WiFi system throughout the plaza will ensure that we are a hot spot in more ways than one.

PLANTS, TREES, BIRDS AND BEES

Across the 6 acres, visitors will encounter over 28,000 plants, including a forest of more than 200 mature trees. Like New Yorkers, our plants will be diverse in species and range in size. The large trees and expansive perennial gardens will be home to migratory birds and pollinators. Wildflowers such as Echinacea, Monarda, and Rudbeckia will attract bees, butterflies and hummingbirds, while fruiting trees and shrubs including Serviceberry, Spicebush and Winterberry will attract birds such as Warblers, Sparrows and American Redstarts to Hudson Yards.



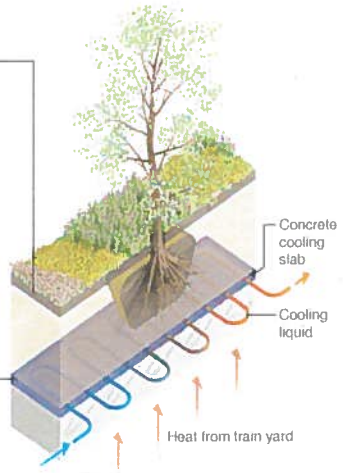


DEEP SUPPORT FROM BELOW

The entire 10 acre platform is held up by hundreds of caissons installed between the tracks to support the platform. These structures vary in diameter from 1' to 5'-6" and each one is drilled deep into the bedrock beneath the tracks, averaging over 40' below the surface. The caissons are effectively underground concrete columns with steel bars inside of them shaped like cages with even more steel inside. The caisson locations have been carefully planned to provide the maximum support for the buildings above while avoiding conflicts with the existing tracks and utilities below.

THE SMARTEST SOIL IN TOWN

With a soil depth of 18 inches for plants and only 4 feet for large trees, admittedly we are shallow, but self-aware and over-compensating for it. The soils have been specially designed to provide effective drainage and nutrients for the plants and ensure our roots can run wide, if not deep. Where trees are planted in paving, a specially engineered "soil sandwich" of sand, gravel and concrete slab will protect the roots while allowing them to expand. The sophisticated layering of this system includes provisions for aeration, irrigation, drainage, root development and ongoing control of nutrients, including specially designed soil chemistry and soil biology.



OUR ROOTS ARE COOL, OUR PLANTS ARE PAMPERED

The heat from the train yard below can reach up to 150 degrees, too hot for our city trees. Therefore, AC is in order to keep the roots of our trees and plants healthy. A sophisticated network of tubing is being embedded within the concrete slab to circulate cooling liquids that maintain optimal conditions for our plant's roots. This cooling system will protect the roots, from the train heat below and summer heat above, and ensure that the plants and trees at Hudson Yards will be the most pampered in New York City.

WE HAVE BIG FANS, LITERALLY!

A ventilation system powered by fans, usually found in jet engines, will remove the heat generated from the train equipment below by covering the rail yards. Consisting of 15 large fans, this ventilation system supplies fresh air at 45 MPH to the track level.

RAIN, RAIN, (DON'T) GO AWAY!

Every drop of rainwater that falls on Hudson Yards will be collected into a 60,000 gallon tank and used for irrigating our plants and trees. This collection saves space in the NYC sewer system and helps keep the Hudson River clean. We also save 6.5 megawatt hours of energy and offset 5 tons of greenhouse gas (GHG) every year by collecting our own water. That GHG savings, combined with the savings from diverting the water from NYC treatment plants, is equivalent to the carbon output over 4 acres of forest!

HUDSON YARDS

HudsonYardsNewYork.com

RELATED

RELATED COMPANIES is one of the most prominent privately owned real estate firms in the United States. Formed 40 years ago, Related is a fully integrated, highly diversified industry leader with experience in virtually every aspect of development, acquisitions, management, finance, marketing and sales. Headquartered in New York City, Related boasts a team of approximately 3,000 professionals who work in offices and at major developments in Boston, Chicago, Los Angeles, San Francisco, South Florida, Washington, D.C., Abu Dhabi, London, São Paulo and Shanghai. The company's existing portfolio of real estate assets, valued at more than $20 billion, is comprised of best-in-class mixed-use, residential, retail, office, trade show and affordable properties in premier, high-barrier-to-entry markets. Related is staunchly committed to sustainable design, with more than $15 billion in green development underway or completed. The firm developed one of the first green residential buildings in the nation, Tribeca Green in New York's Battery Park City, as well as the first such building in Chicago, 340 on the Park.

Related Companies has an expertise in developing mixed-use properties that offer a sophisticated blend of private, public and commercial spaces. These upscale urban complexes, which feature shopping, dining, and entertainment and cultural venues in combination with architecturally award-winning residential, hotel and office structures, become major destinations in themselves.

Time Warner Center, the crown jewel of our New York developments, is a soaring 2.8-million-square-foot mixed-use property in the heart of Manhattan. Located at Columbus Circle, at the southwest corner of Central Park, the tower includes Class A office space, super-luxury condominiums overlooking Central Park, the five star Mandarin Oriental New York hotel, a series of dramatic public spaces, numerous luxury retail shops, a renowned food market, several of the finest restaurants in the United States and the acclaimed performance spaces of Jazz at Lincoln Center.

Also in New York City, Related conceived and developed MiMA, a 1.2-million-square-foot, 63-story mixed-use glass tower featuring luxury residences and M Club, a sprawling, one-plus-acre array of health, recreation and entertainment amenities that includes a residents-only fitness center operated by Equinox®. In addition to its residential offerings, MiMA, named for its location in the middle of Manhattan, also includes Signature Center, the Frank Gehry-designed home of the Signature Theatre Company, known for presenting works by leading playwrights in all stages of their careers; YOTEL New York, an innovative hotel designed by David Rockwell and SoftRoom; and various shopping opportunities.

On Manhattan's West Side, Related is developing a new epicenter of commerce, culture and community at Hudson Yards. With a unique mix of uses, open space, new transportation access and amenities, Hudson Yards is poised to become one of New York City's most vibrant destinations. Historic in its scope and ambition, the master-planned community comprises more than 17 million square feet of commercial and residential development, including approximately 5,000 residences, a unique cultural space, 14 acres of public open space, a 750-seat public school and a 200-room Equinox® branded luxury hotel—all offering unparalleled amenities for residents, employees and guests.

CityPlace in West Palm Beach, Florida, opened in 2000, has become a model for urban mixed-use development, transforming downtown from a deteriorating area to a prime destination. The 72-acre Mediterranean-style complex features street-front specialty retail shops, residential units, an office tower, Palm Beach's most distinguished collection of restaurants, a 20-screen multiplex cinema and The Harriet Himmel Gilman Theater.

Related also developed The Cosmopolitan of Las Vegas, an 8.5-acre, 6.5-million-square-foot mixed-use luxury resort for Deutsche Bank. The 2,995-room project features a 100,000-square-foot casino; unique and eclectic boutiques and restaurants; Sahra Spa & Hammam; three unique pool experiences; multi-level integrated nightclubs and 150,000 square feet of state-of-the-art convention and meeting space.

Related also owns Equinox® Fitness Clubs—broadening the firm's capabilities into health and fitness while enhancing the value of its properties by incorporating an exclusive, branded amenity into its lifestyle offerings—as well as a partnership interest in Union Square Events, the catering, culture, sports and events business of Danny Meyer's Union Square Hospitality Group. Further information about Related Companies is available at **www.related.com**.

Oxford Properties Group is a global platform for real estate investment, development and management, with more than 1,700 employees and $34 billion of real assets that it manages for itself and on behalf of its co-owners and investment partners. Established in 1960, Oxford has offices in Toronto, New York, Washington, Boston and London, each with investment, development and management professionals possessing deep real estate expertise and local market insight.

Oxford's real estate portfolio consists of over 150 properties totaling approximately 56 million square feet, over 9,500 residential units and 3,600 hotels rooms located primarily across Canada, Western Europe and select US markets.

Recently completed development projects include RBC WaterPark Place and MNP Tower totaling 1.2-million-square feet in Toronto and Vancouver, as well as the Leadenhall Building, a 600,000 square foot iconic office development located in the heart of the City of London. Oxford currently has several significant developments underway, including:

- 600 Massachusetts Avenue, a landmark development project at CityCentre in Washington, DC, a joint venture with Gould Property Company;
- the LEED Platinum 100 Adelaide W (EY Tower), a 40 story office tower in Toronto, Canada;
- the four-million-square-foot master-planned, mixed-use industrial Oxford Airport Business Park in Calgary, Canada;
- St James's Market, a landmark office and retail development in St James's District London, UK, joint venture with The Crown Estate;
- a 450,000 square foot expansion to Yorkdale Shopping Centre, a 1.5 million square foot super-regional retail shopping centre in Toronto, Canada; and
- the 17 million square foot master planned, multi-use Hudson Yards development in New York City, in partnership with Related Companies.

As an investor, Oxford uses a rigorous and disciplined approach to identifying, underwriting, acquiring and executing on investment opportunities in each of Canada, the US and Europe. As a developer, Oxford understands the responsibility to meet the needs of the local communities in which our projects reside. As a manager, Oxford's experienced property management teams provide daily customer service to its customers' employees. When surveyed, 92% of customers were satisfied with facility management at their building (compared to 74% industry standard).

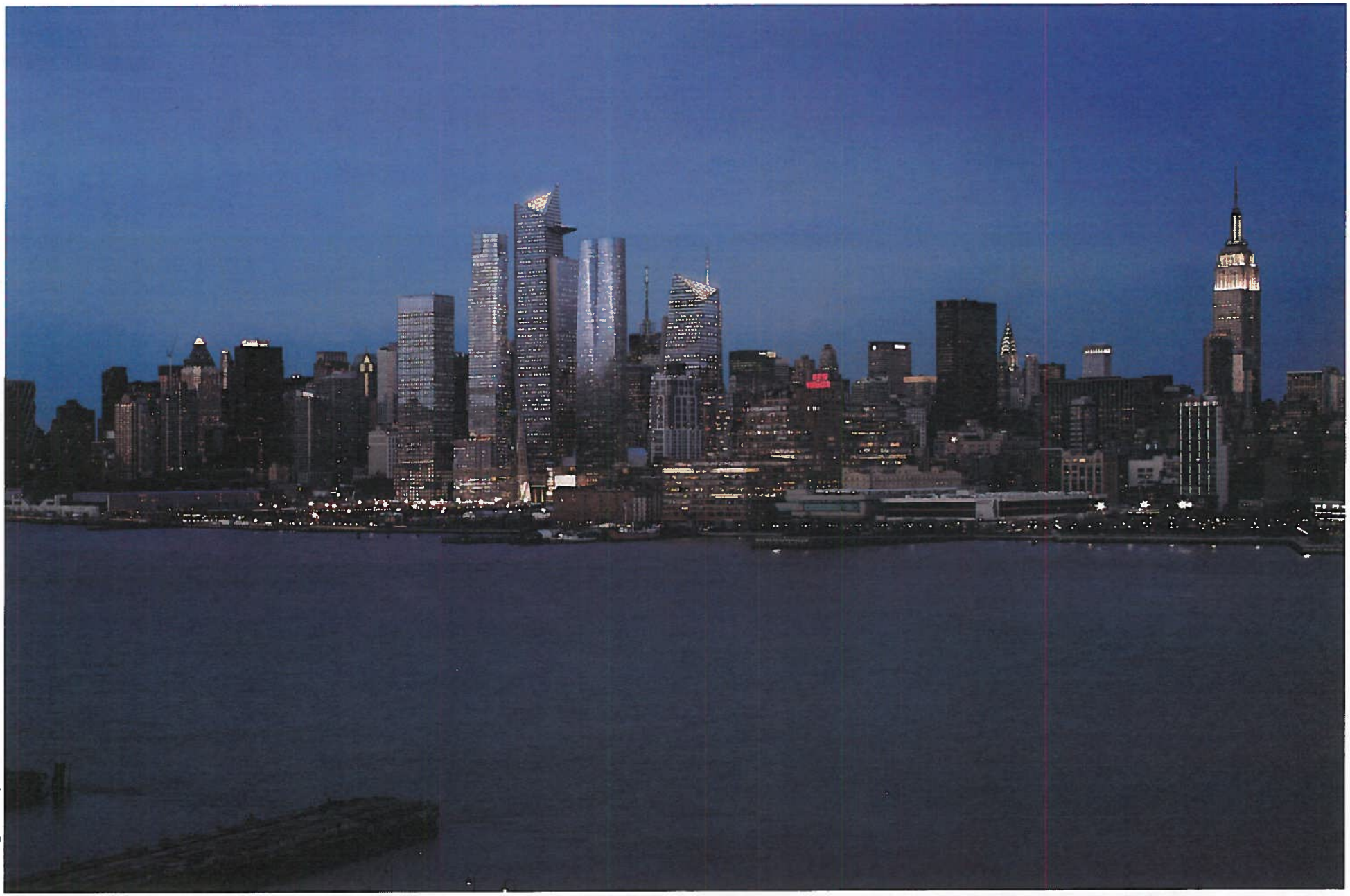
Ranked number one overall in North America for sustainability (office & retail) by the Global Real Estate Sustainability Benchmark (GRESB) (two years running), Oxford strives to integrate sustainability into the operations of its existing buildings and continues to introduce the latest green building materials and technologies into new developments.

For more information about Oxford visit: **http://www.oxfordproperties.com.**

Rendering courtesy of Volley Studio

VIEW OF HUDSON YARDS, FROM THE HUDSON RIVER

HUDSON YARDS



Rendering courtesy of visualhouse

EVENING VIEW OF HUDSON YARDS, FROM THE HUDSON RIVER

HUDSON YARDS

Rendering courtesy of visualhouse

VIEW OF HUDSON YARDS, LOOKING SOUTH FROM THE NO. 7 SUBWAY STATION

HUDSON YARDS

Rendering courtesy of visualhouse

VIEW OF HUDSON YARDS AND 520 WEST 28TH ST., LOOKING NORTH FROM THE HIGH LINE

HUDSON YARDS

Rendering courtesy of visualhouse

10 AND 30 HUDSON YARDS WITH THE SHOPS AT HUDSON YARDS, LOOKING NORTHEAST

HUDSON YARDS

Rendering courtesy of visualhouse

10 HUDSON YARDS, VIEWED FROM THE HIGH LINE

HUDSON YARDS

Rendering courtesy of Diller Scofidio + Renfro/Rockwell Group

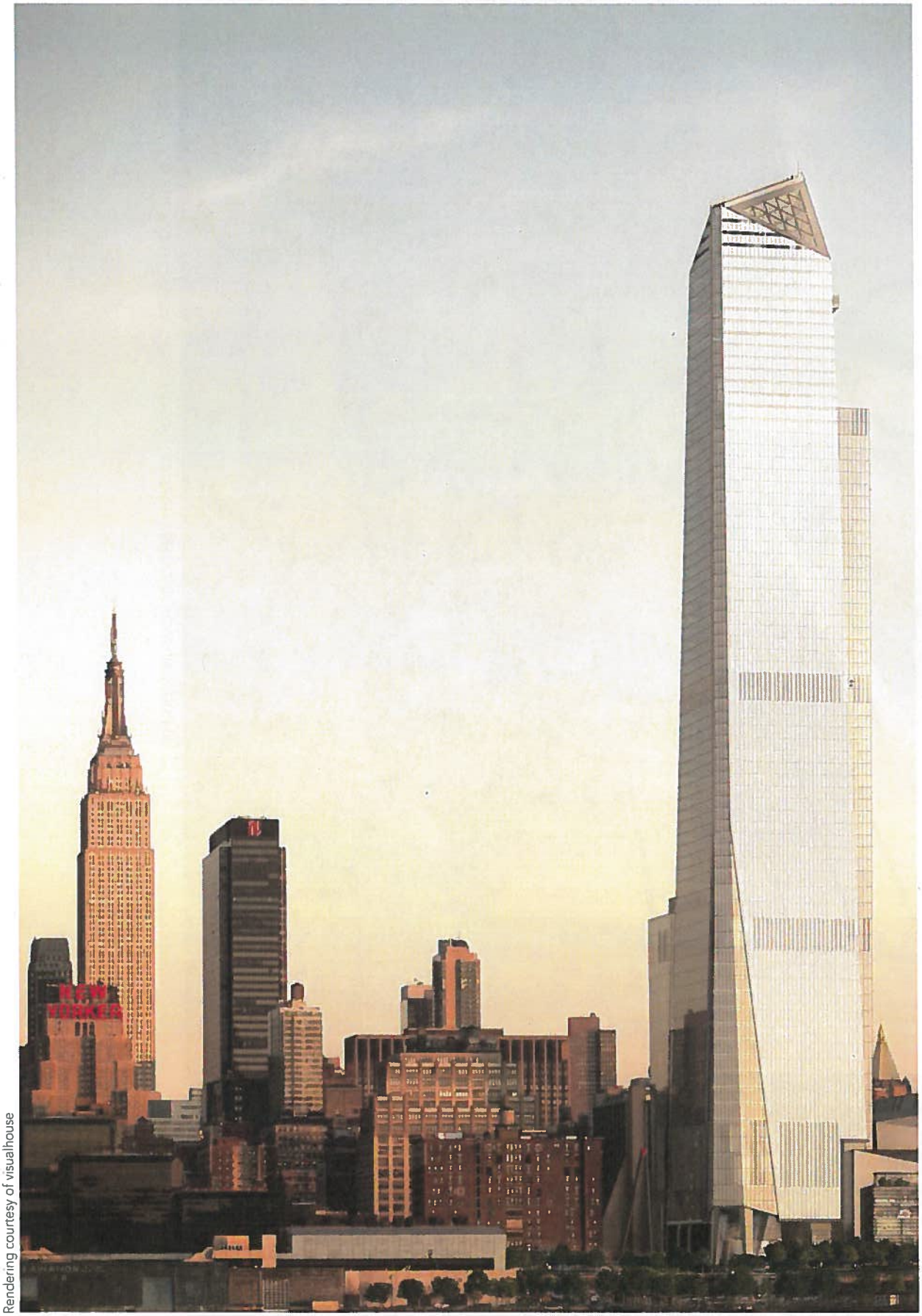
15 HUDSON YARDS,
VIEWED FROM 30TH ST. AND 11TH AVE.

HUDSON
YARDS

Rendering courtesy of visualhouse

15 HUDSON YARDS, PENTHOUSE VIEW LOOKING SOUTH

HUDSON YARDS



Rendering courtesy of visualhouse

30 HUDSON YARDS, VIEWED FROM THE HUDSON RIVER

HUDSON
YARDS

Rendering courtesy of visualhouse

30 HUDSON YARDS AND THE SHOPS AT HUDSON YARDS, VIEWED FROM THE NO. 7 SUBWAY STATION

HUDSON YARDS

Rendering courtesy of visualhouse

35 HUDSON YARDS

HUDSON YARDS

Rendering courtesy of BY-ENCORE

55 HUDSON YARDS

HUDSON YARDS

Rendering courtesy of BY-ENCORE

55 HUDSON YARDS VIEWED FROM THE HIGH LINE

HUDSON YARDS

Rendering courtesy of BY-ENCORE

NO. 7 SUBWAY STATION AT 34TH ST.

HUDSON YARDS

Rendering courtesy of Volley Studio

THE SHOPS & RESTAURANTS, LOOKING EAST FROM THE PLAZA

HUDSON YARDS

Rendering courtesy of Elkus Manfredi Architects

THE GREAT ROOM, THE SHOPS AT HUDSON YARDS

HUDSON YARDS

Rendering courtesy of Elkus Manfredi Architects

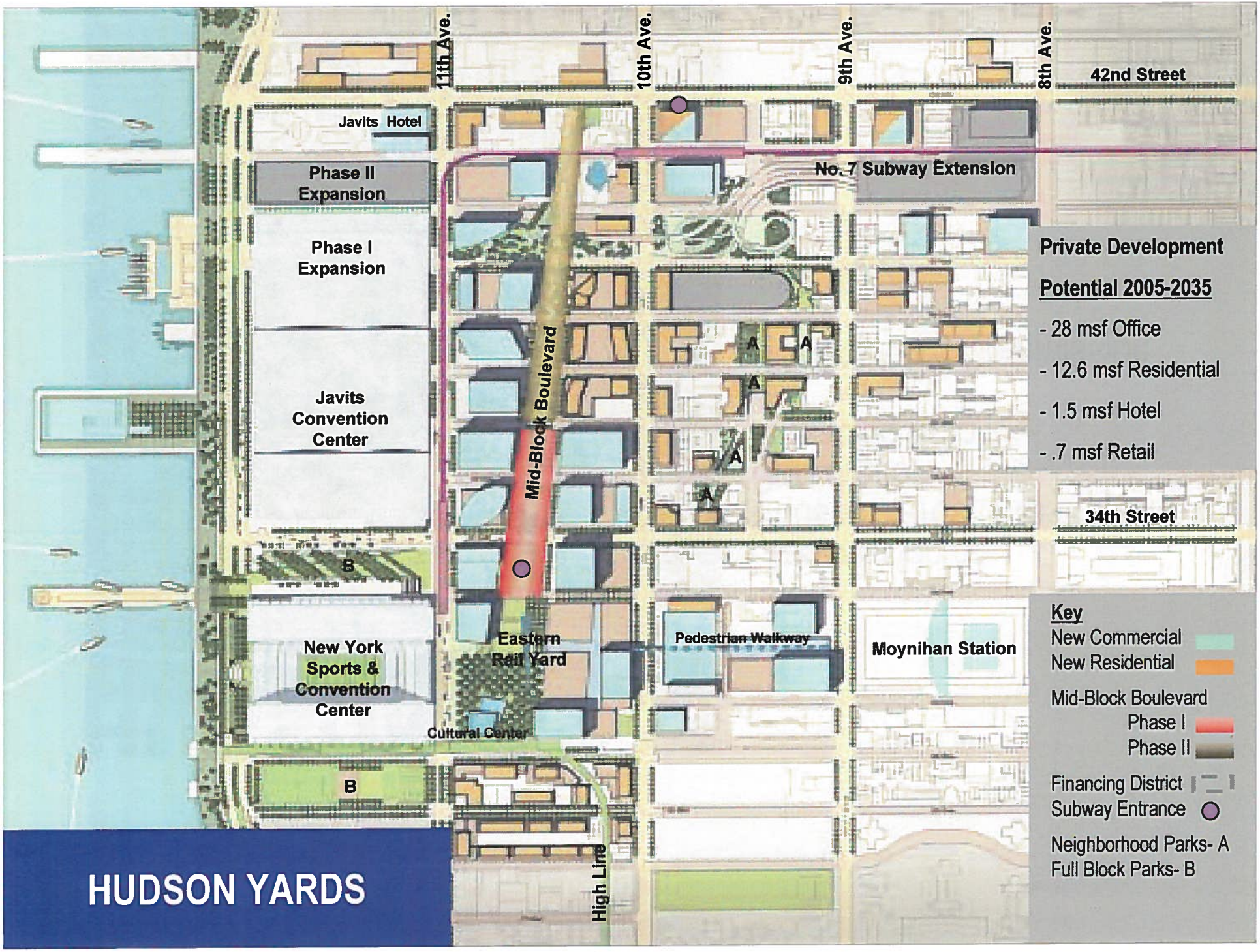
FOURTH FLOOR RESTAURANT VIEW, THE SHOPS AT HUDSON YARDS

HUDSON YARDS

HUDSONYARDS

Presentation of Hudson Yards Infrastructure Corporation Financing Plan to City Planning Commission

July 12, 2004


11th Ave.
10th Ave.
9th Ave.
8th Ave.
42nd Street
Javits Hotel
Phase II Expansion
Phase I Expansion
Javits Convention Center
No. 7 Subway Extension
Mid-Block Boulevard
A
B
34th Street
New York Sports & Convention Center
Eastern Rail Yard
Pedestrian Walkway
Moynihan Station
Cultural Center
High Line
Private Development Potential 2005-2035
- 28 msf Office
- 12.6 msf Residential
- 1.5 msf Hotel
- .7 msf Retail
Key
New Commercial
New Residential
Mid-Block Boulevard
Phase I
Phase II
Financing District
Subway Entrance
Neighborhood Parks- A
Full Block Parks- B
HUDSON YARDS

East of Eleventh Ave

"Commercial / Residential District"

- Extend No. 7 Subway to W. 34th St. and Eleventh Ave.
- Eastern Rail Yard Platform
- New Parks and Streets

FINANCED BY HUDSON YARDS INFRASTRUCTURE CORPORATION

West of Eleventh Ave

"Convention Corridor"

- NY Sports & Convention Center
  - 75,000 seat stadium
  - 40,000 seat plenary hall
  - 200,000 sf expo space
  - 30,000 sf meeting space
- Javits Expansion
  - 1,100,000 sf expo space
  - 265,000 sf meeting space
  - Headquarters Hotel on 42nd St.

TO BE FINANCED SEPARATELY BY THE CITY AND STATE

HUDSONYARDS

Hudson Yards Infrastructure Corporation

- Hudson Yards Infrastructure Corporation ("HYIC") is a local development corporation
- Board members appointed by the Mayor
- Exists as financing entity only
- Plan makes use of existing policies and procedures wherever possible
  - NYCIDA for commercial PILOTs
  - Utilizes familiar residential programs like the 421a abatement, and the 80/20 program

HUDSONYARDS

Hudson Yards Infrastructure Corporation

New Development Generates Revenue

A series of revenue streams are created and pledged to HYIC including:

- Payments in Lieu of Taxes (PILOTs)
- Property Taxes on New Residential Development
- Eastern Rail Yard (ERY)
  - Value of 5.1 msf of development on-site
  - Value of 5.7 msf of transferred floor area (FA)
- Disposition of surplus publicly-owned parcels by sale or ground lease
- Bonus payments into zoning-based District Improvement Fund (DIF)
- Payments in Lieu of Sales Tax (PILOST)

HUDSONYARDS

Hudson Yards Infrastructure Corporation

Revenue Summary

Projected Revenues (2005-2035)

Source	Total (Nominal $ M)	NPV[1] (2003 $ M)
Commercial		
Commercial PILOTs	7,239.1	1,838.1
Residential		
Property Taxes	5,391.3	1,162.9
Eastern Rail Yard		
ERY On-Site Land Value	812.1	262.8
Payments for Transferred FA	911.6	269.7
Other		
Land Sales / Ground Leases	110.6	68.6
Bonus Payments into DIF	1,327.6	452.2
PILOST	415.1	155.6
TOTAL	**$16,207.3**	**$4,209.9**

[1] Discounted at 6%

Source: NYC Office of Management & Budget, NYC EDC, NYC Planning, Cushman & Wakefield Analytics

HUDSONYARDS

Hudson Yards Infrastructure Corporation

Project Phasing

Phase 1

No. 7 Subway Extension

- Construction of No. 7 subway extension and terminal station at 34th St and 11th Ave

Eastern Rail Yard (ERY)

- Construction of platform over ERY to create 6-acre park and future development sites

Open Space & Streets

- Condemnation and construction of first 3 blocks of Mid-Block Boulevard (MBB) and parks (33rd to 36th St)
- Condemnation and construction of active recreation park on Block 675

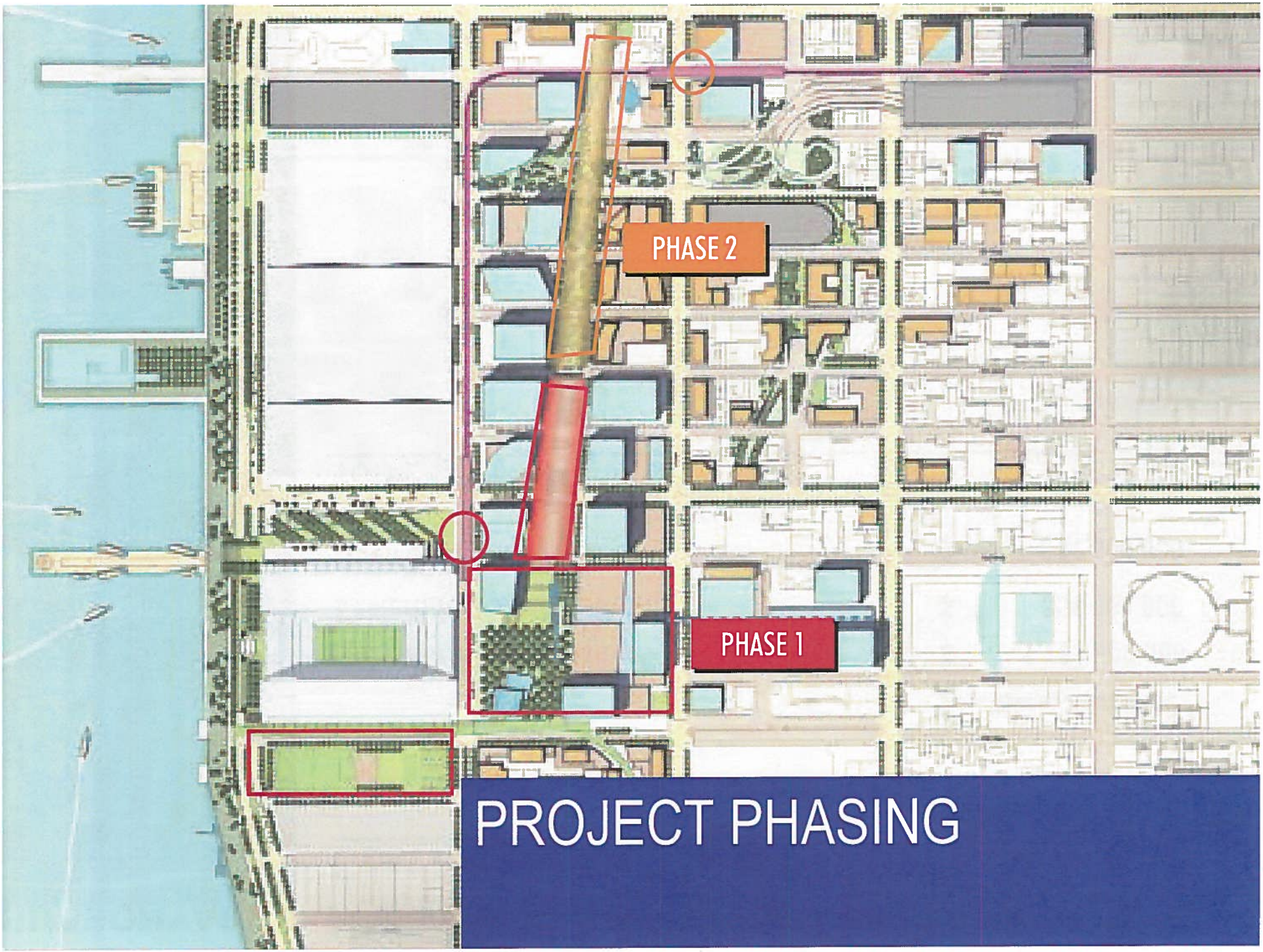
Phase 2

41st Street Station

- Build-out of No. 7 Line 41st St Station

2nd Phase of Mid-Block Boulevard and Parks

- Construction of Northern blocks of MBB and bridge (36th to 42nd St)



PROJECT PHASING

HUDSONYARDS

Cost Estimates: Phase 1

Hudson Yards Infrastructure Corporation

Project Costs

		2003 $
No. 7 Subway Extension	$	1,763,800,000
Eastern Rail Yard Platform	$	351,000,000
Open Space & Streets	$	361,500,000
TOTAL	$	2,476,300,000

HUDSONYARDS

Cost Estimates: Phase 2

Hudson Yards Infrastructure Corporation

Project Costs

		2003 $
No. 7 Subway 41st Street Station	$	250,000,000
2nd Phase of Mid-Block Boulevard and Parks	$	271,000,000
TOTAL	$	521,000,000

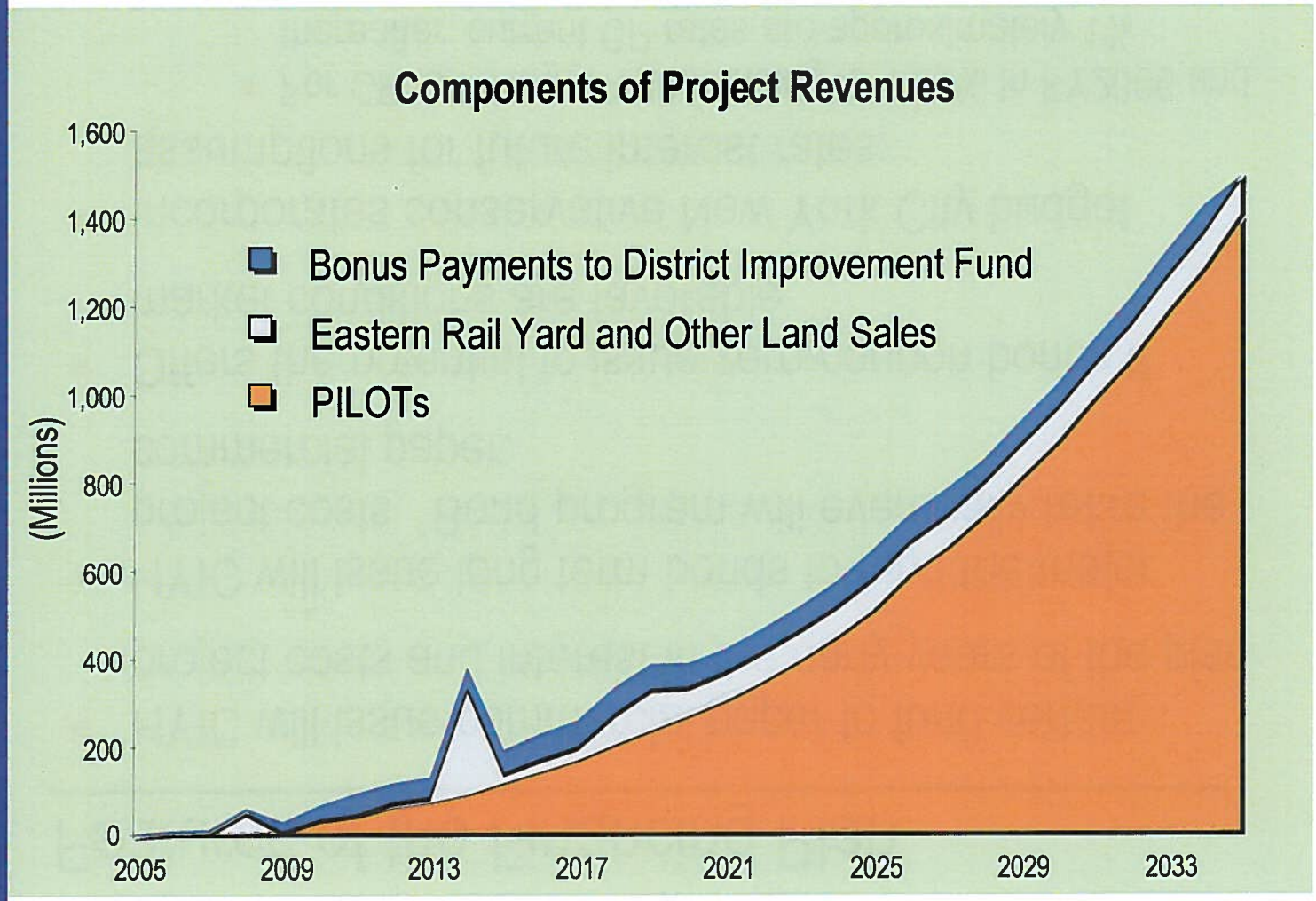
HUDSONYARDS

HYIC FINANCING PLAN

HUDSONYARDS

HUDSON YARDS INFRASTRUCTURE CORPORATION

HYIC has developed a financing program that utilizes the available project revenues from the Hudson Yards Redevelopment Project



HUDSONYARDS

HUDSON YARDS INFRASTRUCTURE CORPORATION

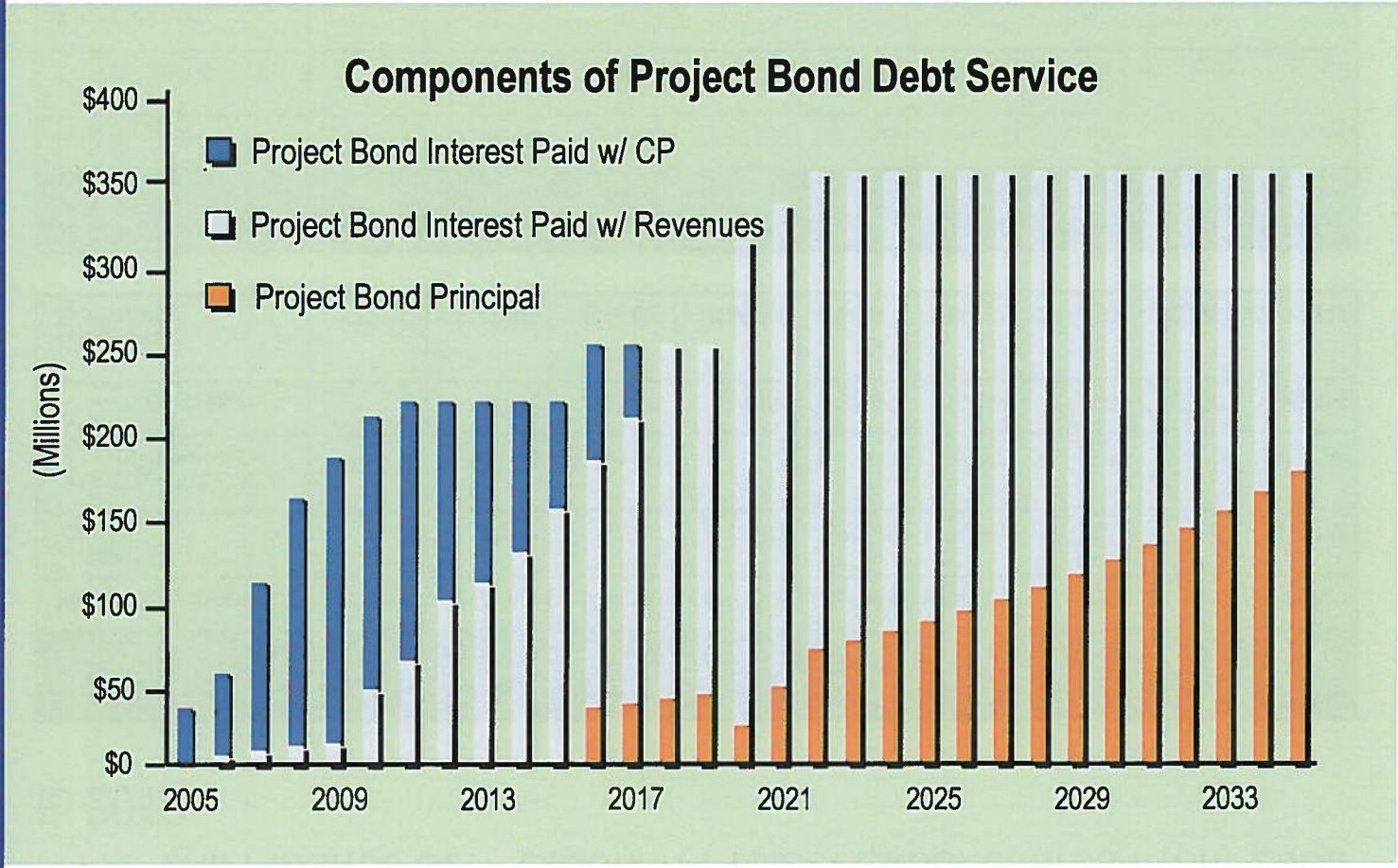
Features of the Financing Plan

- HYIC will issue commercial paper to fund certain project costs and interest in the early years of the plan
- HYIC will issue long term bonds to fund the major project costs. Bond program will eventually retire the commercial paper.
- Offers the potential to issue zero-coupon bonds if market conditions are favorable
- Incorporates conservative New York City budget assumptions for future interest rates:
  - For CP: 3.75% in FY2005 rising to 4.25% in FY2006 and thereafter; current CP rates are approximately 1%
  - For bonds: 6% in FY2005 rising to 7% in FY2007 and thereafter; current long-term rates are approximately 5%

HUDSONYARDS

HUDSON YARDS INFRASTRUCTURE CORPORATION

Plan incorporates a flexible short term commercial paper program with credit support from the New York City Transitional Finance Authority



HUDSONYARDS

HUDSON YARDS INFRASTRUCTURE CORPORATION

HYIC Will Finance $2.7 Billion in Project Expenditures From 2005 to 2012

Project Expenditures	2005	2006	2007	2008	2009	2010	2011	2012	Total
No. 7 Subway Extension	$92,653	$474,849	$584,064	$498,888	$204,544	$104,829	$0	$0	$1,959,828
Eastern Rail Yard Platform	0	10,017	10,267	94,019	96,370	98,779	101,248	0	410,700
Open Space and Streets-Condemnation	0	149,149	61,151	0	0	98,780	0	0	309,080
Construction	0	13,000	13,325	13,658	13,999	14,349	14,708	15,076	98,114
Total Project Expenditures	**$92,653**	**$647,015**	**$668,807**	**$606,565**	**$314,913**	**$316,737**	**$115,956**	**$15,076**	**$2,777,722**

Sources of Project Funding	2005	2006	2007	2008	2009	2010	2011	2012	Total
Bond Proceeds	$470,000	$265,000	$652,000	$600,000	$290,000	$295,000	$107,186	$0	$2,679,186
Excess Project Revenue	0	1,658	2,449	3,292	3,727	13,432	0	0	24,559
Interest Earnings	7,137	6,615	8,360	10,398	9,929	10,962	10,567	10,008	73,977
Total Project Funding	**$477,137**	**$273,273**	**$662,809**	**$613,691**	**$303,656**	**$319,394**	**$117,753**	**$10,008**	**$2,777,722**

$ in Thousands

HUDSONYARDS

HUDSON YARDS INFRASTRUCTURE CORPORATION

HYIC Will Utilize Commercial Paper Financing to Pay Interest on Project Bonds in the Early Years

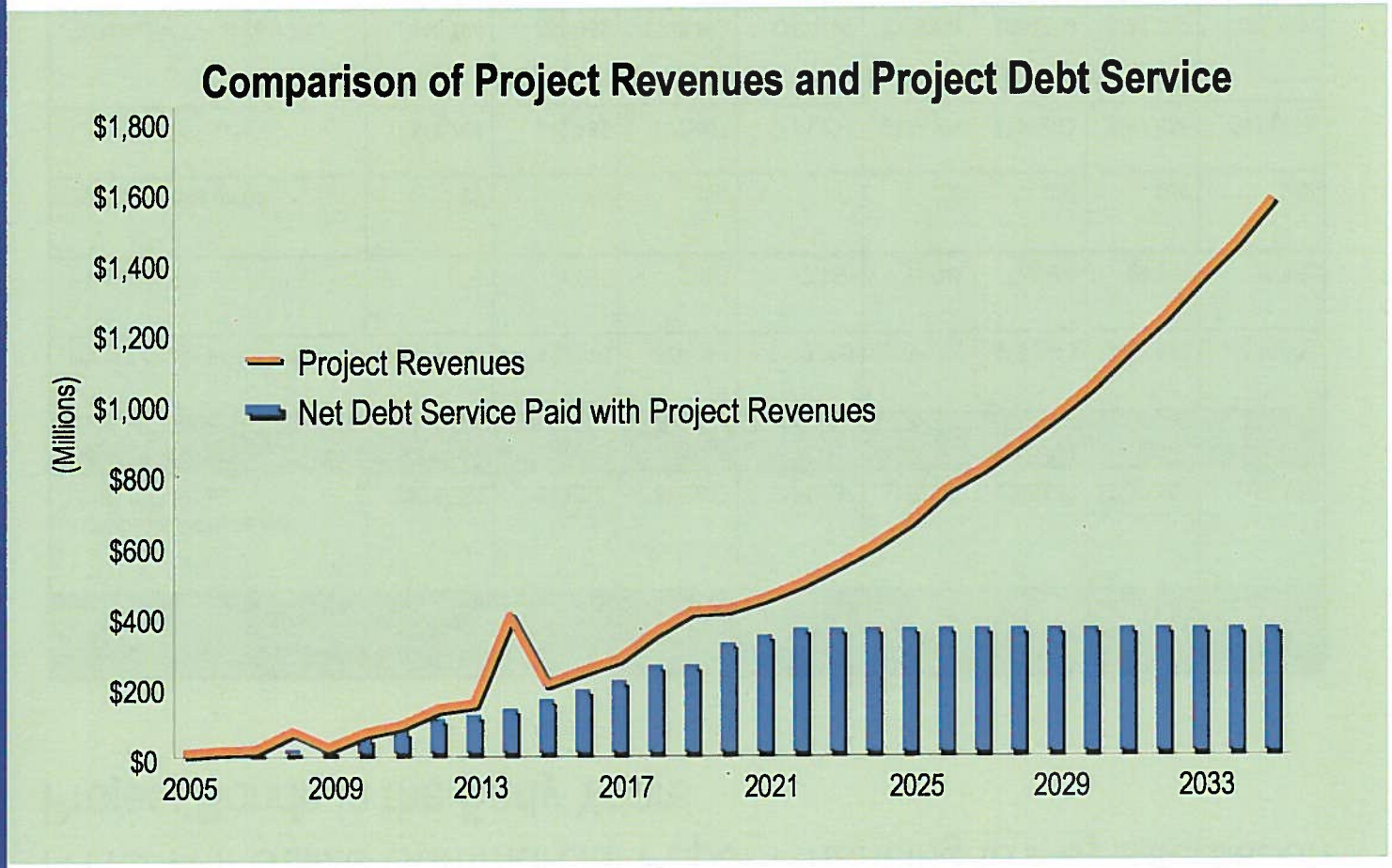
Sources of Funds	2005	2006	2007	2008	2009	2010	2011	2012
Incremental Commercial Paper (CP) Issued	$16,764	$42,191	$77,607	$131,237	$172,399	$186,613	$187,534	$174,518
Uses of Funds								
Interest on Project Bonds	$16,739	$40,924	$74,082	$123,290	$158,095	$165,473	$157,518	$135,606
Interest on CP	0	1,204	3,409	7,750	14,045	20,860	29,734	38,650
Issuance Costs on CP	25	63	116	197	259	280	281	262
Total Uses of Funds	**$16,764**	**$42,191**	**$77,607**	**$131,237**	**$172,399**	**$186,613**	**$187,534**	**$174,518**
Outstanding CP at Year End	**$16,764**	**$58,955**	**$136,562**	**$267,799**	**$393,245**	**$579,858**	**$767,392**	**$923,395***

* CP will be permanently financed by additional bonds secured by project revenues in the period after 2012.
$ in Thousands

HUDSONYARDS

HUDSON YARDS INFRASTRUCTURE CORPORATION

The result is a plan of finance that fits debt service on the bonds within the projected project revenues, with flexibility to absorb fluctuations in actual revenues



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Summary

- HYIC can fund needed investment by issuing debt backed primarily by future revenues from new development
- Commercial paper program bridges gap in early years until project revenues ramp up
- New construction and new jobs created in Hudson Yards will generate billions in incremental personal income, sales, and other taxes that will flow directly to the City, State and MTA

HUDSONYARDS

SOURCES AND USES: WEST OF 11TH AVE

JAVITS EXPANSION (PHASE 1)

Uses	Nominal $ M
Expansion/Renovation	$750
Hotel	350
Land/Other	300
TOTAL USES	$ 1,400

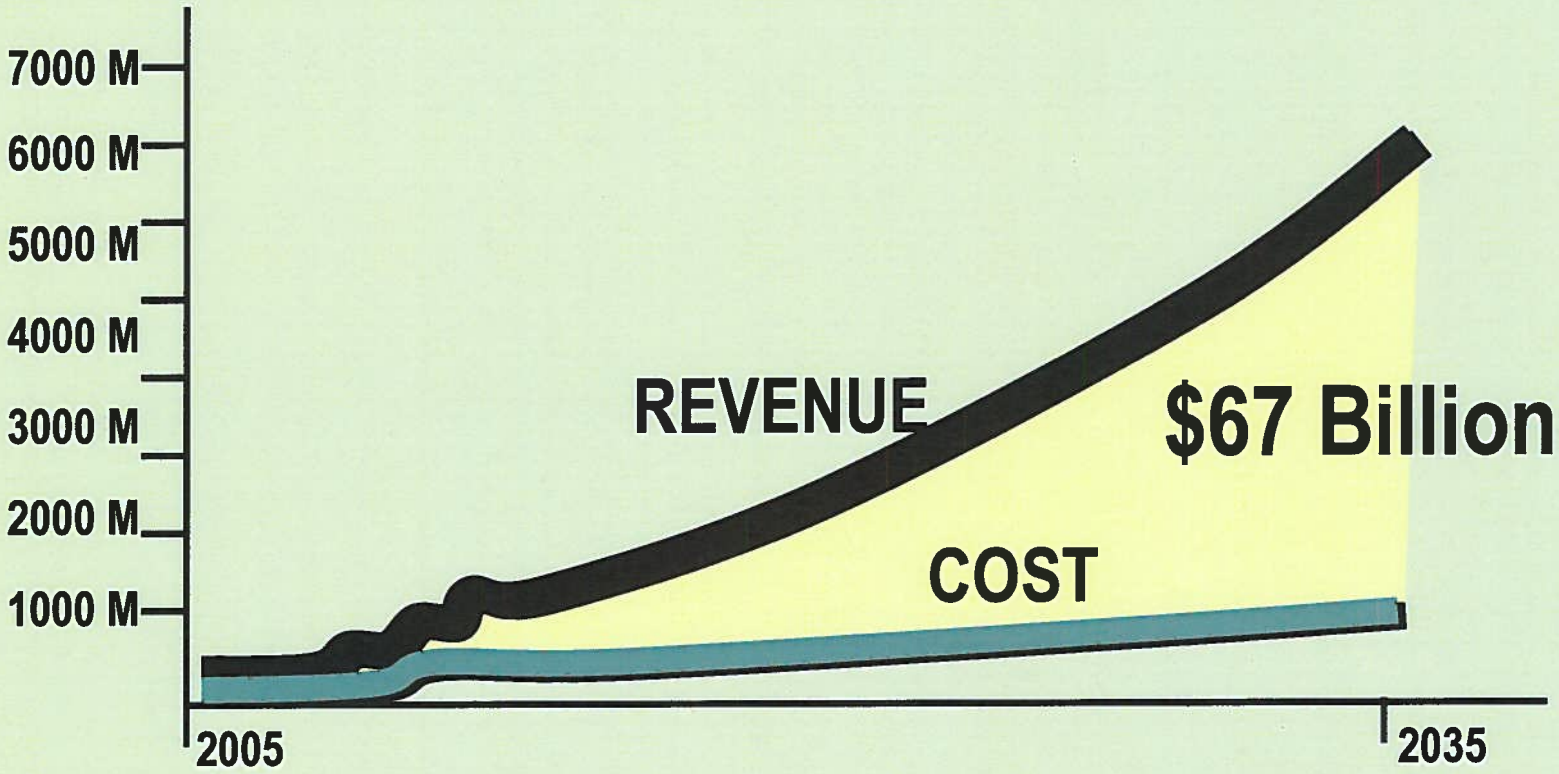
Sources	Nominal $ M
City – BPCA 7(a)(2) Revenues	$350
State – Javits bond restructuring	350
Hotel industry investment ($1.50 key surcharge)	500
Hotel development investment	200
TOTAL USES	$ 1,400

New York Sports & Convention Center

Uses	Nominal $ M
Building	$800
Retractable roof	200
MTA Platform	400
TOTAL USES	$ 1,400

Sources	Nominal $ M
Jets private investment	$800
City investment – convention use (roof)	200
City investment – MTA platform	100
State investment – MTA platform	300
TOTAL USES	$ 1,400

Incremental Revenues to City and State



Source: NYC Economic Development Corp.

New York City Independent Budget Office Fiscal Brief

April 2013

Financing Redevlopment on the Far West Side:

City's Spending on Hudson Yards Project Has Exceeded Initial Estimates

Summary

In 2005, the city launched its planned transformation of the Far West Side of Manhattan—an area that has become known as Hudson Yards—into a high-density office, commercial, and residential area through rezoning, the extension of the 7 subway line, and the creation of a new park-lined boulevard. To fund the infrastructure upgrades, the plan called for value capture financing, a strategy that uses the expected taxes and fees from new developments in the area to back the bonds issued to pay for the infrastructure improvements. Recognizing that in the early years of the project revenues would not be sufficient to make interest payments on the bonds issued to fund the redevelopment, the city committed to make up the difference.

The Bloomberg Administration is now proposing a major rezoning of East Midtown. Concerned that this new initiative would compete with Hudson Yards and slow the revenue growth needed to make Hudson Yards self-supporting, Council Member Daniel Garodnick asked IBO to review city spending to date on the plan and to consider the short-term outlook for revenues at Hudson Yards. Among our findings:

- Public expenditures paid to the Hudson Yards Infrastructure Corporation, including funds to help make interest payments on the $3 billion in bonds issued by the corporation, have totaled $374 million since 2006.
- Over the same period, the city has committed an additional $22 million from its capital budget and $12 million from its operating budget to the project.
- Revenue collected by the Hudson Yards corporation has fallen short of expectations. The corporation projected that it would collect $283 million in tax and fee revenues through 2012, but in fact has collected $170 million.
- Property tax revenue that has been dedicated to the project (tax equivalency payments) from other newly developed buildings in the area is expected to grow from $28 million in 2012 to $33 million this year and $44 million next year. IBO expects payments from the first new office tower in Hudson Yards to begin in 2017 or 2018.

The extension of the 7 train, originally estimated at $2.1 billion, is now expected to cost $2.4 billion. The higher cost comes despite the complete elimination of one of the planned subway stations as well as savings on other parts of the subway-related work. The city is responsible for cost overruns on the 7 extension and $55 million of its $101 million in capital spending for Hudson Yards is for the transit work.

IBO

New York City
Independent Budget Office
Ronnie Lowenstein, Director

110 William St., 14th floor
New York, NY 10038
Tel. (212) 442-0632

Fax (212) 442-0350
iboenews@ibo.nyc.ny.us
www.ibo.nyc.ny.us

Background

In January 2005, the City Council approved a plan to transform the industrial blocks and rail yards of the Far West Side into a high-density, mixed-use neighborhood. The Far West Side was rezoned to accommodate 25 million square feet of office space, tens of thousands of residential units, new hotel and retail properties, and acres of new open space. (Initial proposals also called for a new stadium for the New York Jets football team that would double as an extension of the neighboring Javits Center, though those plans were later abandoned.)

As part of its vision, the city proposed $3 billion in new infrastructure projects to make this new development feasible. The lynchpin was the extension of the 7 train from its terminus in Times Square to a new station at 11th Avenue and West 34th Street. The city would also build a park-lined boulevard from West 30th Street to 42nd Street between 10th and 11th Avenues.

Despite the Bloomberg Administration's advocacy for the subway project, the Metropolitan Transportation Authority (MTA) had not prioritized the extension of the 7 train in its capital planning prior to the rezoning. Rather than let the infrastructure projects fail due to lack of financing by the MTA, the Bloomberg Administration made an unusual, if not unprecedented, proposal: the city would pay for nearly 100 percent of the subway improvements and other investments necessary to catalyze development in the Far West Side. (Normally, improvements to the transit system are funded by MTA capital proceeds and federal transportation grants. Given the priority of other projects like the Second Avenue Subway and East Side Access, it could have been years before the MTA committed to funding the 7 train extension.)

The financing plan that the Bloomberg Administration pursued is one of the few examples of a value capture financing strategy ever employed in New York City. (For background on the plan, see IBO's "West Side Financing's Complex, $1.3 Billion Story.") The theory behind the plan is that the rezoning of the Far West Side and the extension of the 7 subway line would vastly increase the development potential of land within the neighborhood. Rather than finance the project through its capital budget, the city could instead capture the tax and fee revenue generated by the new developments induced by the infrastructure investments and issue bonds backed by that revenue. The potential increase in value was substantial. According to the November 2006 revenue forecast prepared by Cushman & Wakefield for the city, new developments were expected to generate $283 million in revenue through 2012 and more than $34 billion by 2050.[1] (Unless otherwise noted, all years refer to city fiscal years.)

The Bloomberg Administration and the City Council created two new local development corporations to implement this plan. The Hudson Yards Development Corporation (HYDC) is charged with managing the planning, design, and development of the Hudson Yards area, with the exception of the extension of the number 7 train, which is overseen by the MTA. The Hudson Yards Infrastructure Corporation (HYIC) is authorized to issue bonds to finance capital improvements in the Hudson Yards area. HYIC's bonds are backed by revenue generated by new development projects in the Hudson Yards financing area (generally the blocks of West 30th to West 42nd Streets between 8th Avenue and the West Side Highway). The corporation has had two bond offerings to date: $2 billion in 2007 and an additional $1 billion in 2012. (HYIC can issue an additional $500 million worth of bonds with approval from the City Council.)

Given the expected lag between the start of infrastructure construction and the completion of the first new buildings, the City Council also agreed to make interest support payments to the Hudson Yards Infrastructure Corporation should its revenues fall short of its annual debt service payments. Over time, as new buildings are completed, the Bloomberg Administration expects that the corporation will be able to pay 100 percent of the debt service on its bonds using project revenue. Once HYIC begins generating surpluses, it will begin to buy back bonds and to set aside money to pay principal that is scheduled to come due when its bonds mature.[2]

Revenue collected to date, however, has fallen short of the corporation's initial forecasts. Through the end of 2012, HYIC has collected $170 million in tax and fee revenue, compared with the $283 million projected by Cushman & Wakefield. In addition, the corporation realized $252 million in interest earnings on its unused bond proceeds. HYIC's interest expenses over the same period totaled $478 million.

Since 2006, public financial support for HYIC has totaled $374 million, including both foregone tax revenue otherwise due to the city's general fund and direct appropriations from the city's budget to make up the difference between HYIC's revenue and its interest obligations. During that time, the city has provided $137 million in subsidies for so-called interest support payments to HYIC, with annual payments rising to more than $79 million in 2012. The city prepaid all

Public Expenditures Received by Hudson Yards Infrastructure Corporation
Dollars in millions

Revenue Source	2006	2007	2008	2009	2010	2011	2012	2013	2014	Total for 2006-2012	Total Paid Through 2012
Interest Support Payments	$0.0	$0.0	$0.0	$0.0	$15.0	$42.7	$79.3	$125.0	$30.6	$137.0	$292.6
Tax Equivalency Payments	0.0	5.0	1.7	7.8	13.3	25.9	27.7			81.5	81.5
Total	**$0.0**	**$5.0**	**$1.7**	**$7.8**	**$28.3**	**$68.6**	**$107.0**	**$125.0**	**$30.6**	**$218.5**	**$374.1**

SOURCES: Hudson Yards Infrastructure Corporation Financial Statements, fiscal years 2006-2012; Mayor's Office of Management and Budget
NOTES: Reflects payments made by the city through June 30, 2012. Interest support payments of $15 million for 2010 were prepaid in 2009. Similarly, interest support payments totaling $155.6 million for 2013 and 2014 were prepaid in 2012. Totals may not sum due to rounding.
New York City Independent Budget Office

of its 2013 and part of its anticipated 2014 interest support payments to HYIC from its 2012 budget surplus.[3] In addition, the city has funded $22 million in capital improvements to date from its capital budget and spent $12 million from the expense budget on demolition of buildings in the area.

Given that recurring payments in lieu of taxes (PILOT) revenue from office properties is unlikely to start until 2017 at the very earliest, and tax equivalency payments (TEP) from residential and hotel properties will increase slowly over the next few years, IBO expects the city will continue to make annual interest support payments to cover any shortfall at HYIC for the near future. Moreover, the city plans to commit an additional $79 million in city capital dollars through 2022.

This report updates IBO's previous analyses of the Hudson Yards financing plan to reflect new developments over the last eight years. The brief is divided into three sections. The first provides an overview of what the Hudson Yards Infrastructure Corporation and the city have spent on the Hudson Yards project to date. Next, we summarize the financing plan that backs the corporation's bonds, as well as the subsidies the City Council has appropriated to date. Finally, we provide a short-term forecast for the corporation's recurring revenues.

Hudson Yards Spending To Date

Through the end of 2012, the Hudson Yards Infrastructure Corporation has spent nearly $2.0 billion on project-related expenses, which include the costs to acquire land and to design and build its capital projects. Most of that total ($1.58 billion) has been spent on the extension of the 7 train. HYIC has spent another $390 million on what it classifies as Land Acquisition and Public Amenities. The remainder has gone towards funding the Hudson Yards Development Corporation's design and construction

Expenses of the Hudson Yards Infrastructure Corporation
Dollars in millions

	Expenses							
	2006	2007	2008	2009	2010	2011	2012	2006-2012
Project Expenses								
Subway Extension	$0.0	$37.6	$248.8	$391.9	$310.3	$275.6	$316.4	$1,580.6
Land Acquisition and Public Amenities	0.0	71.0	264.5	(43.9)	9.7	69.2	19.1	389.6
Transfers to HYDC	1.5	6.2	3.0	5.2	4.3	3.2	3.0	26.4
Subtotal Project Expenses	$1.5	$114.7	$516.2	$353.3	$324.3	$348.0	$338.6	$1,996.6
Non-Project Expenses								
Bond Interest	$0.0	$0.0	$106.3	$90.1	$88.6	$88.2	$105.1	$478.4
General and Administrative	0.4	0.4	0.6	0.6	0.7	0.8	9.5	13.1
Cost of Bond Issuance	0.0	29.9	0.0	0.0	0.0	0.0	7.1	37.0
Subtotal Non-Project Expenses	$0.4	$30.3	$106.9	$90.8	$89.3	$89.1	$121.6	$528.4
Total Expenditures	**$1.9**	**$145.0**	**$623.2**	**$444.0**	**$413.6**	**$437.1**	**$460.2**	**$2,525.0**
Other Financing Uses								
Payments to MTA for Eastern Rail Yards Development Rights	$0.0	$100.0	$33.3	$33.3	$33.3	$0.0	$0.0	$200.0

SOURCE: Hudson Yards Infrastructure Corporation Financial Statements, fiscal years 2006-2012
NOTE: Totals may not sum due to rounding.
New York City Independent Budget Office

management work. Non-project expenses, which include interest payments, financing costs, and HYIC's administrative expenses, have totaled $528 million.[4] HYIC also used $200 million in bond proceeds to acquire transferrable development rights from the MTA, with the intention of reselling them to developers. Though not technically an expense, the acquisition reduced the funds available for capital projects.

Subway Extension. The budget for the design and construction of 7 train extension is currently $2.42 billion, of which $2.37 billion will be funded by HYIC's bond proceeds. HYIC has spent $1.58 billion on the subway extension through the end of 2012. Service is expected to begin in June 2014.

When the project was first announced in 2006, the city and MTA budgeted $2.1 billion for the extension, including a 5 percent contingency allowance to cover potential cost overruns. In September 2008, bids to excavate the first phase of the extension came in higher than expected. In order to save $450 million and keep the project on budget, the city chose not to fund the construction of a shell for a second station at 41st Street and 10th Avenue.

By 2011, despite the earlier round of cuts, the total budget had risen to more than $2.4 billion, including the contingency allowance. Since the city was responsible for funding these overruns, HYIC and the Mayor's Office chose to finance the $267 million shortfall through a combination of cutbacks and additional city capital spending.[5] The city identified $235 million in savings by tapping into a portion of the project's contingency fund and taking advantage of savings found in other aspects of the project, including lower than expected costs for both land acquisition and HYDC's operating expenses. The remaining $32 million in overruns is being funded through the city's capital budget. (Actual and planned city capital spending on the 7 train extension currently stands at $55 million. See page 5 for more information.)

According to the transportation authority, HYIC has spent $1.58 billion on the subway extension through 2012. The majority of that, $1.3 billion, has been for construction and construction management, with an additional $107 million spent on design. Another $149 million were spent on design, construction, and management work not related to the subway. This category includes construction work related to public amenities that had to be coordinated with the work on the subway, though was not directly related to subway operations. The MTA also funded $53 million for work related to the Environmental Impact Statement.

If the project stays on budget, the remaining construction work will cost up to $786 million, which is expected to be paid from the remaining bond proceeds. Construction costs account for $565 million of the remaining budget, with an additional $117 million in nonsubway work that will be funded by HYDC. Construction management is expected to cost $21 million. The budget includes a $76 million reserve for subway expenses that may or may not be spent, depending on final project costs.

If project costs exceed the budget, the city will either have to find savings elsewhere in the project, appropriate additional city capital money, or tap into HYIC's remaining $500 million of bond capacity, which would require City Council approval. At the time this report was prepared, HYIC has no plans to issue additional debt.

7 Train Extension Budget and Expenditures Through June 2012
Dollars in millions

	Total Budget	Expenditures	Budget Remaining
Final Design	$114.0	$107.3	$6.7
Construction	1,870.9	1,305.8	565.1
Construction Management	40.0	19.3	20.7
Subway Project Reserve	75.9	0.0	75.9
Total HYDC-Funded Subway Work	$2,100.8	$1,432.4	$668.4
HYDC-Funded Nonsubway Work	266.0	148.9	117.1
Total of HYDC-Funded Subway and Nonsubway Work	$2,366.8	$1,581.3	$785.5
MTA-Funded Environmental Impact Statement Work and Other	53.1	53.0	0.1
TOTAL	**$2,419.9**	**$1,634.3**	**$785.6**

SOURCE: Metropolitan Transportation Authority Transit Committee Report, July 2012
NOTE: Nonsubway work includes design and construction of public amenities built in coordination with the construction of the subway but not directly related to subway operations.

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Land Acquisition and Public Amenities. Through 2012, HYIC reports that it has spent $390 million to acquire land and to design and build the project's public spaces. This figure does not include the $200 million that HYIC paid to the MTA to acquire a 50 percent interest in over 4 million square feet of transferrable development rights (TDRs), also known as air rights, from the MTA's Eastern Rail Yard. HYIC records the TDRs as an asset because they are intended to be resold to developers at a later date. As such, the $200 million payment to the MTA is not classified as an expense, even though the funds came out of HYIC's bond proceeds. Until the TDRs begin to be sold, however, this represents a reduction in the total funds available for capital projects.

Of the $390 million in spending on land acquisition and public amenities, $378 million represents money paid to property owners to acquire the land necessary to complete the project. According to the city, HYIC has no plans to acquire additional property for the Hudson Yards project. The full list of properties acquired, either in full or in part, was not made available to IBO at this time, though public documents state that HYIC and the MTA have condemned property necessary to build the subway extension and the first phase of public open space improvements in the Hudson Yards area.[6]

The remaining $12 million was spent on the public amenities. This lines up with what is reported in the city's capital plan, with $10 million in private funds (from HYIC) committed through 2012 for city capital projects related to the reconstruction of West 33rd Street and the park and boulevard, discussed below in more detail.

The city is also spending $12 million to demolish buildings in the Hudson Yards area. The demolitions are funded through the Department of Housing Preservation and Development's expense budget.

Culture Shed. The city has also proposed a 170,000 square foot multipurpose arts facility on the site of the Eastern Rail Yards. The building, known as the Culture Shed, will be administered by Culture Shed, Inc., a nonprofit organization whose board is appointed by the Mayor.[7] The city plans to acquire the land under the proposed Culture Shed and lease it to Culture Shed, Inc. to build and operate the facility. HYDC has also received a $100,000 grant from the National Endowment for the Arts to help fund the project's design.

As of this report, the city has not announced how much the project will cost or the share of costs that the city will bear. One media report suggested that the project will be funded by a combination of city funds and private donations.[8] It is expected to open in 2017.

City Capital Projects in Hudson Yards. The city's current capital plan includes a number of projects directly related to the development of Hudson Yards, including parts of the 7 train extension, street and open space improvements, and water and sewer connections. The city is expected to fund $101 million, or 46 percent, of this additional work, with the remainder coming from HYIC bond proceeds.

The city's capital plan calls for $88 million in work relating to the extension of the 7 line. Through 2012, $51 million has been spent on the project, with 60 percent of the funding, or $30 million, coming from HYIC's bond proceeds. The remaining $37 million in work to be completed will be funded almost entirely from the city's capital budget, with only $2 million to be funded from HYIC's bond proceeds.

The reconstruction of West 33rd Street and the construction of the first phase of the midblock park and boulevard between 10th and 11th Avenue are primarily funded using proceeds from the Hudson Yards bonds. Construction on these projects is expected to continue through 2014 at a total cost of $86 million, with nearly all of it ($85 million) paid for with bond proceeds. Through 2012, preliminary work on these two projects has cost $12 million, of which $10 million came from bond proceeds and the remaining $2 million from city funds.

The first phase of the midblock boulevard and park covers only the blocks between West 33rd Street and West 36th Street. HYIC does not plan to acquire land or fund the construction of the second phase of the park, which includes the blocks between West 36th Street and West 39th Street. Instead, it anticipates that developers of properties along those blocks will build Phase 2 of the boulevard and park in exchange for additional development rights.

The city also plans to fund another $44 million in water and sewer improvements in Hudson Yards from its capital budget. This project is not funded from HYIC's bond proceeds and no funds had been committed as of the end of 2012.

The city is also conducting routine street reconstruction, bridge maintenance, and other water and sewer work throughout the Hudson Yards project area. IBO has not included spending on those projects, under the assumption

Actual and Planned Capital Spending in Hudson Yards Area
Dollars in millions

Project	Actual (2005-2012)			Planned (2013-2022)			Total		
	City	HYIC	Total	City	HYIC	Total	City	HYIC	Total
Number 7 Train Extension	$20.4	$30.2	$50.6	$35.0	$2.0	$37.0	$55.4	$32.2	$87.6
Reconstruction of West 33rd Street	$1.7	$2.8	$4.5	$0.0	$39.6	$39.6	$1.7	$42.4	$44.1
Midblock Boulevard and Cross Streets	$0.0	$7.3	$7.3	$0.0	$34.9	$35.0	$0.0	$42.3	$42.3
Reconstruction of Water and Sewers	$0.0	$0.0	$0.0	$44.3	$0.0	$44.3	$44.3	$0.0	$44.3
Total	**$22.0**	**$40.3**	**$62.4**	**$79.3**	**$76.5**	**$155.9**	**$101.4**	**$116.9**	**$218.3**

SOURCES: Mayor's Office of Management and Budget; New York City Financial Management System
NOTE: Totals may not sum due to rounding.

New York City Independent Budget Office

that most of these projects would have likely taken place even if the Hudson Yards rezoning had not passed.

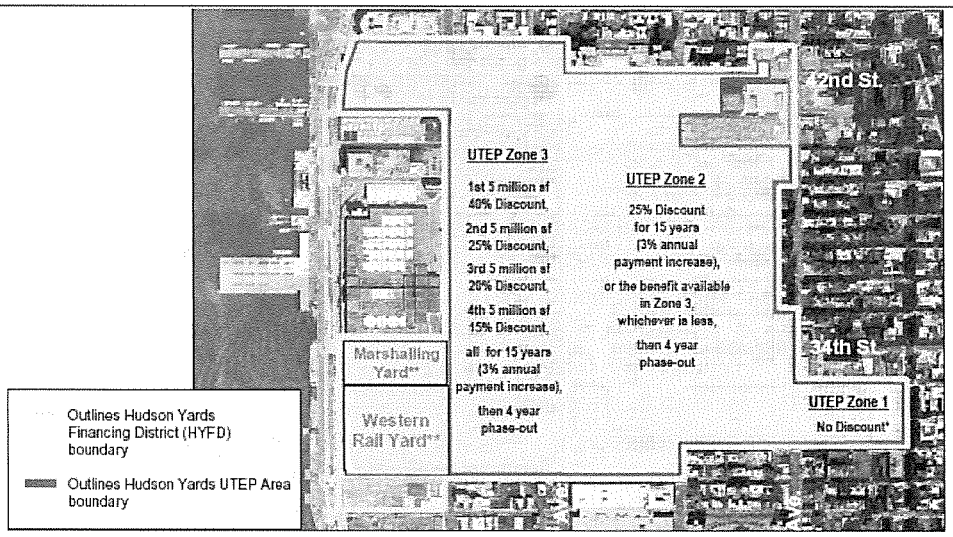
Hudson Yards Infrastructure Corporation Revenue to Date

When it created the Hudson Yards Infrastructure Corporation, the city pledged that it would redirect all tax and fee revenue generated by new projects in the Hudson Yards area to repay the $3 billion in bonds issued by the Hudson Yards Infrastructure Corporation. The borders of the Hudson Yards Financing District are shown in the map below. Though the project was initially centered on the MTA's Eastern Rail Yards, the financing area covers dozens of blocks in the West 30s and 40s. The irregularly shaped area also extends east to include Madison Square Garden and Penn Plaza, north to include portions of the blocks between 42nd and 43rd Streets, and south to 29th Street between 11th and 12th Avenues. It includes the Port Authority Bus Terminal, but carves out the Javits Convention Center and the piers along the Hudson River.

Currently, the corporation receives two different types of revenue. The first type, called project revenue, is revenue generated directly by new development projects in the Hudson Yards financing area, while the second type, called non-project revenue, is revenue that does not stem from new development.

HYIC receives two different kinds of project revenue: development rights that the city sells to developers at the time of construction and recurring, annual property tax revenue (or the equivalent) paid by owners of new buildings in the Hudson Yards area, including payments in lieu of taxes revenue collected by the Industrial Development Agency (IDA) and tax equivalency payments (TEP) appropriated to HYIC by the City Council.

HYIC's non-project revenue represents the revenue it receives from sources other than the taxes and fees paid by new development projects. To date, HYIC has received two kinds of non-project revenue: the earnings it collects from investments of its unused bond proceeds and interest



SOURCE: Hudson Yards Development Corporation

support payments (sometimes paid in advance as grants) from the city, which the City Council appropriates each year if HYIC's other sources of revenue fall short of its annual debt service payments.

Recurring Property Tax Revenue. As part of its agreement with the Hudson Yards Infrastructure Corporation, the city has pledged to transfer to HYIC all property tax revenue paid by buildings in the Hudson Yards area that have been newly constructed or substantially renovated after January 19, 2005, as evidenced by the issuance of a temporary or final certificate of occupancy. Due to legal restrictions, however, the city created two different mechanisms to accomplish this. Certain commercial properties can apply to the city's Industrial Development Agency to receive full exemptions on their property tax obligations in exchange for payments in lieu of property taxes. These agreements are referred to as PILOTs. All other new or renovated properties that do not enter into PILOT agreements with the IDA pay their property taxes normally. For these remaining properties, the City Council has agreed to appropriate an amount of money equal to the total real property taxes they pay each year. This transfer to HYIC from the general fund is referred to as a tax equivalency payment, or TEP.

Payments in Lieu of Real Property Tax. Based on its initial market studies, the city determined that the construction of office space on the Far West Side would not be economically feasible without some level of public subsidy. To ensure that projects in Hudson Yards would be competitive with projects in more desirable locations, office projects in the Hudson Yards area are eligible to receive a full exemption on their real property tax obligations for up to 19 years in exchange for agreeing to make PILOT payments to the IDA. The PILOT payments are structured to offer property owners discounts of up to 40 percent relative to what they would have paid if they were not exempt. Developers can also receive full exemptions on sales taxes on construction materials.

To qualify, projects must meet certain requirements. First, they must be located within specific areas of the Hudson Yards project area known as the Uniform Tax Exemption Policy area, which largely overlaps with the Hudson Yards Financing District, with the exception of the Western Rail Yard, the Javits Center's marshalling yard, and the Port Authority Bus Terminal. Projects must be at least 1 million square feet in size, with at least 75 percent of the usable space dedicated to Class A office space or other commercial uses. Buildings must also be built to at least 90 percent of the maximum square footage allowed under the zoning code, including all bonuses.

There has been no revenue paid though PILOT agreements as of the end of June 2012 because there has been no new office construction meeting PILOT requirements in the Hudson Yards area. The Related Companies' (Related) first office tower in the Eastern Rail Yards, popularly known as the south tower with Coach, Inc. as its anchor tenant, is expected to enter into the first PILOT agreement with the IDA. With construction beginning in winter 2013 (this could ultimately be reflected on the 2014 or 2015 property tax assessment roll) and the building receiving the standard three-year construction period, the south tower is not likely to begin paying a PILOT until 2017 or 2018.[9]

The PILOT payments made by buildings will flow directly from the Industrial Development Agency to the Hudson Yards Infrastructure Corporation, which means that they will not appear in the city's budget.

Tax Equivalency Payments. Other than buildings that enter PILOT agreements with the Industrial Development Agency, buildings in the Hudson Yards financing area pay their real property taxes normally, as they would if they were located anywhere in New York City. Each year, the Mayor's Office of Management and Budget identifies all buildings that have been built or substantially renovated since January 2005 and sums all of their tax payments for the fiscal year, including adjustments made in the current year for taxes paid in previous years.[10] A building's property taxes can start counting toward the tax equivalency payment on the tax roll immediately following the issuance of a temporary or final certificate of occupancy by the Department of Buildings. As part of the budget process, the Bloomberg Administration requests that the City Council appropriate the sum of these

Tax Equivalency Payments By Property Type
Dollars in millions

	Tax Equivalency Payments					
	2008	**2009**	**2010**	**2011**	**2012**	**Total**
Hotel	$0.1	$0.5	6.0	$11.2	$11.8	$29.6
Rental	4.3	4.1	5.8	6.1	8.2	28.6
Condo (inc. 1-Family)	0.1	0.2	1.9	4.6	5.0	11.8
Commercial	1.0	1.0	1.2	2.4	2.9	8.5
Total	**$5.5**	**$5.9**	**$15.0**	**$24.2**	**$27.9**	**$78.5**

SOURCES: Department of Finance, Mayor's Office of Management and Budget
NOTE: Tax equivalency payments for 2008-2012 calculated by IBO based on actual property tax payments. Totals may not sum due to rounding.
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payments to the Hudson Yards Infrastructure Corporation in the form of a tax equivalency payment.

The market for residential and hotel development in the Hudson Yards area has proven to be strong, even during the 2008-2009 recession. IBO reviewed 36 residential, hotel, and commercial properties that contributed to the tax equivalency payments made from 2008 through 2012. These properties include buildings that have been built or renovated in the financing area since 2005, including at least four parcels that were substantially completed prior to the rezoning but had not yet received a final Certificate of Occupancy at the time the rezoning was adopted.[11] These figures do not match the TEP payments in the city budget. While the amounts for 2009 through 2012 are close, there is a more substantial discrepancy in 2008, with the budget figures about $3 million higher than our analysis of the property tax data suggested. However, IBO needed to estimate 2008 TEP payments for six properties because of missing data, possibly contributing to the discrepancy. Since the city has not provided building-level details on payments made prior to 2012, it is not possible to reconcile the difference.

Based on tax data available for individual parcels, IBO estimated the tax equivalency payments from 2008 through 2012 total $78.5 million. This cumulative estimate from individual tax lots is about $3 million lower than the aggregate reported in the city's Financial Management System. Taxes paid by hotels in the Hudson Yards financing district have provided $29.6 million to HYIC since 2008, while rental buildings added another $28.6 million in property tax revenue. Condominiums have seen a smaller tax contribution, totaling $11.8 million from 2008 through 2012. Commercial property that did not qualify for a PILOT through the Industrial Development Agency, either due to building size or use, has contributed $8.5 million to the tax equivalency payments.

Upfront Fees and Bonus Payments. The rezoning of the Hudson Yards neighborhood dramatically increased the amount of space that developers can build within the district. Rather than simply increasing the amount that developers could build as-of-right, however, the city created what is essentially a layer cake of development rights, in which developers pay bonuses or purchase transferrable development rights from other sites in order to assemble the maximum development potential of their properties. The exact composition of this layer cake of development rights differs for commercial and residential properties. For all buildings, the first layer is based on the floor-area ratio that developers can build as-of-right under the zoning code. (Floor-area ratio, or FAR, is the ratio of a building's square footage to the square footage of the lot on which it is built. For example, on a 2,000 square foot lot with a FAR of 5.0, a developer could build a 10,000 square foot building.)

Layered Development Rights by Property Type

	Commercial	Residential
Layer 3	Transferrable Development Rights from Eastern Rail Yards (where available)	District Improvement Fund Bonus
Layer 2	District Improvement Fund Bonus, or Phase 2 In-Lieu Contribution	District Improvement Fund Bonus and Inclusionary Housing Bonus, or Phase 2 In-Lieu Contribution and Inclusionary Housing Bonus
Layer 1	As-of-Right	As-of-Right

SOURCE: New York City Zoning Resolution, Article IX, Chapter 3: Special Hudson Yards District

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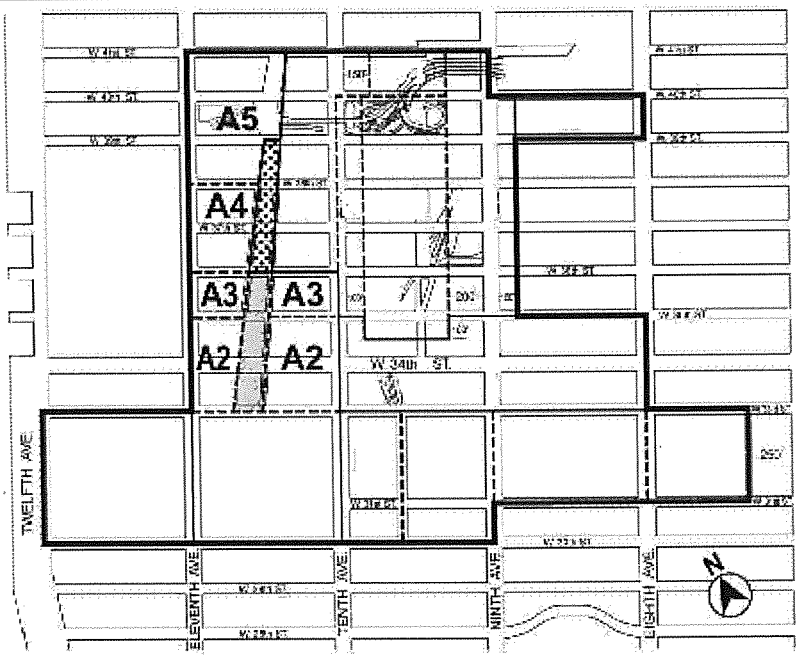
For commercial buildings, the second layer is added by paying a district improvement fund bonus (DIB) for each incremental square foot developed up to a specific FAR threshold. Depending on a building's location, developers can acquire additional density on top of the district improvement fund bonus by purchasing transferrable development rights from the Eastern Rail Yard.

For developers of residential buildings, the second tier of development rights comes from the purchase of DIBs and the use of inclusionary housing bonuses. Developers must add six square feet of inclusionary housing for every five square feet of FAR increase added through DIBs, up to a specific threshold. Developers can fulfill their inclusionary housing obligations either by providing affordable units on-site or by paying for the construction of affordable housing elsewhere in the neighborhood. Once a building has reached this threshold, developers can add additional FAR by paying for additional district improvement fund bonuses.

Developers of residential and commercial properties located adjacent to the second phase of the Hudson Boulevard and Park are also eligible to add FAR to their sites in exchange for building a portion of the boulevard or park. Developers can substitute development rights from these Phase 2 in-lieu contributions for development rights that they would otherwise have to purchase from the District Improvement Fund.



Special Hudson Yards District
Subdistricts
Subareas within subdistricts
Phase 1 Hudson Boulevard and Park
Phase 2 Hudson Boulevard and Park

SOURCE: New York City Zoning Resolution, Article IX, Chapter 3: Special Hudson Yards District, Appendix A

District Improvement Fund Bonus. The Hudson Yards Infrastructure Corporation has collected more than $88 million in revenue from the sale of District Improvement Fund Bonuses through 2012, though collections have slowed dramatically since 2008. DIB payments are made when developers apply for a building permit and payments flow directly to HYIC. In January 2005, the Department of City Planning set the initial price at $100 for every square foot of development rights acquired through the program. The city planning department updates the price each August based on the percentage change in the consumer price index for the previous 12 months. As of August 2012, the price of DIBs had increased to $120.61 per square foot.

Developers can elect to build a portion of the Phase 2 section of boulevard and park in exchange for additional development rights. These air-right bonuses come in two forms. First, developers can acquire a lot designated as a Phase 2 site and transfer its development rights to a nearby lot along the boulevard that they intend to develop. In addition, they can also apply to the City Planning Commission to receive a second floor-area bonus in exchange for building the public park land. Since these contributions can be substituted for rights that developers would otherwise purchase from the District Improvement Fund, the Phase 2 financing plan could reduce DIB revenue flowing to HYIC. No developments have used the Phase 2 bonus or transferrable development rights to date.

As part of its December 2006 agreement with HYIC, the city agreed to assign all DIB revenue paid by Hudson Yards projects to HYIC. This means that DIB revenue does not appear in the city budget.

Eastern Rail Yards Transferrable Development Rights. The Hudson Yards Infrastructure Corporation purchased a 50 percent interest in 4.56 million square feet of transferrable development rights from the MTA's Eastern Rail Yards for $200 million using proceeds from its 2007 bond offering. Under the terms of the agreement between HYIC and the MTA, the Hudson Yards Development Corporation has the authority to market and sell the development rights to developers of new commercial buildings along the proposed boulevard between 10th and 11th Avenues north of West 33rd Street, which is the northern boundary of the Eastern Rail Yards. According to the zoning resolution, the rights cannot be sold within the Eastern or Western Rail Yards or to developers building on the Amtrak rail yards

located between the Eastern Rail Yard and the Farley Post Office. (The zoning resolution restricts the sale of the Eastern Rail Yard TDRs to property owners located in zoning subareas A2, A3, A4 and A5.) Since these TDRs are part of the third layer of benefits, developers must maximize development capacity added from the second layer of development rights before they can purchase additional development rights from the Eastern Rail Yard.

The price of the transferrable development rights will be set at the lesser of the price of the district improvement fund bonus at the time of the sale or 60 percent of the per square foot value of the development that is receiving the bonus as determined by an independent appraiser.

The terms of the agreement also set out how HYIC and the MTA split the proceeds. HYIC will receive all of the proceeds from the sale of the development rights until it has collected $200 million, plus the interest it has paid on the $200 million up to that point.[12,13] After that milestone is reached, the MTA will receive all of the proceeds earned on the remaining sales.

Through the end of the 2012, the Hudson Yards Infrastructure Corporation has not sold any of the 4.56 million square feet of development rights. No commercial construction has begun in the areas eligible to receive the air rights, and no projects in that area have announced plans to begin construction in the near future.

Payments in Lieu of Mortgage Recording Taxes. Commercial projects that enter into PILOT agreements with the Industrial Development Agency also are required to make payments in lieu of the mortgage recording tax. These payments flow to the IDA, which will then convey them to HYIC. To date, no projects have made payments in lieu of mortgage recording tax, though Related's south tower is expected to make one in 2013 once its construction loan closes.

Payments in Lieu of Sales Taxes. Projects that enter into PILOT agreements with the IDA can also apply for exemptions on the sales tax due on construction materials. The Uniform Tax Exemption Policy grants the Industrial Development Agency wide latitude in granting sales tax benefits. The IDA can offer savings ranging from 100 percent of sales and use taxes to no benefit at all. Projects that receive partial exemptions or no benefits would be required to make a payment in lieu of sales taxes equivalent to what they otherwise would have owed. As with payments in lieu of the mortgage recording tax, these payments flow to the IDA, then to HYIC.
To date, Related has not applied for a sales tax exemption for the south tower. It is unclear if the company will apply for an exemption at a later date.

Interest Earnings on Bond Proceeds. The Hudson Yards Infrastructure Corporation has earned more than $250 million from investing its unused bond proceeds. These earnings helped cover its structural deficits during the first years of its existence, but the earnings have fallen over time. By 2012, revenue from investment earnings had fallen to $1.4 million. (Some portion of the earnings are available to pay debt service, though the city has not said how much of these funds were available and used each year to help HYIC make its interest payments.)

Through the end of 2011, HYIC's investment earnings came almost entirely from a series of flexible repurchase agreements it entered into after the sale of its first bonds in 2007. Under the terms of the agreements, the city invested its unspent bond proceeds in investment vehicles that paid fixed rates of return ranging from 4.635 percent to 4.835 percent and that allowed it to withdraw money as needed to pay for capital expenses. The agreements expired in March 2011.

As of June 30, 2012, HYIC had nearly $938 million in investments, including the unspent proceeds from its 2012 bond offering. These proceeds are now invested in a combination of high-grade commercial paper, Treasury bills and money market funds, and notes from the Federal Farm Credit Bank and Fannie Mae. Given that the yields on these investments are substantially lower than what the city earned on its now-expired repurchase agreements, it is unlikely that HYIC will be able to use investment earnings to significantly reduce the city's interest support obligations in the future.

Interest Support Payments and Grants. The final source of revenue backing the HYIC bonds is interest support payments from the city's debt service budget. The City Council is not legally obligated to support HYIC, but it has agreed to subsidize the corporation should its revenue fall short of its annual debt service payments on up to $3 billion worth of bonds. This support comes in the form of interest support payments, which are appropriations from the city's budget for interest due on HYIC's outstanding debt in the current fiscal year.

In some years, the Mayor's Office of Management and Budget opts to prepay interest support payment from the budget surplus available at the end of the year. Using the

budget surplus to prepay debt service expenses is a common practice. Because the city must end the year with a balanced budget with revenues equaling expenses, the city uses any available surplus to prepay certain expenses that would otherwise be due in the following year. The most common items to prepay are debt service expenses and subsidy payments to the Metropolitan Transportation Authority or the city's libraries. HYIC shows the prepayment as a grant from the city in the year the payment is made, even if it is intended to cover interest payments in a later year.

The city's first payment came at the end of 2009, when it made a $15 million prepayment (or grant) to HYIC out of its surplus in that year, which was used to cover HYIC's interest payment shortfall in 2010. In 2011 and 2012, the city appropriated the interest support payment during the year it was due, making a payment of $43 million in 2011 and $79 million in 2012. The city has also made a prepayment of $156 million from the 2012 surplus. According to city budget documents, the $156 million is expected to cover the entire interest support payment for 2013 and part of the interest support payment for 2014.

Summarizing Revenue Through 2012. Project revenue has fallen short of the corporation's annual debt service payments. Through the end of 2012, HYIC collected $170 million in project revenue (revenue from development), while interest payments over the same period totaled $478 million. The city did not expect the project to be self-sustaining in its early years, even in a best case scenario. But the $170 million in project revenue through 2012 fell well short of HYIC's initial forecast of $283 million.

Through 2010, HYIC subsidized its operations and obligations primarily using the money it earned by investing the bond proceeds it had yet to spend. However, total earnings fell as the corporation began spending money on projects, interest rates fell, and the composition of its portfolio changed, declining from a peak of $127 million in 2008 to $1.4 million in 2012. As a result, the corporation has had to rely increasingly on interest support payments from the city's debt service budget to close the gap between its revenue and its annual debt service obligations.

According to Cushman & Wakefield's November 2006 forecast, interest support payments through 2012 were expected to be between $7 million and $228 million, depending on the amount of projected development that took place. In its conservative cyclical forecast, Cushman & Wakefield estimated that the city would need to make $205 million in payments through 2014, with $119 million coming through 2012. A more conservative estimate at 60 percent of the cyclical scenario projected interest support payments of $804 million through 2023, with $228 million through 2012. In its baseline forecast, Cushman & Wakefield predicted that the city would make only a single $7 million payment in 2008. While the city's actual payments are in that range, development has been far slower than projected and the city has not had to compensate with higher interest support payments because of HYIC's significant investment earnings, which were not included in the 2006 forecast.

Hudson Yards Infrastrucure Corporation Revenue Before Interest Support Payments
Dollars in millions

	Revenue							
	2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2006-2012**
Recurring Revenue Sources								
Payments in Lieu of Taxes	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	**$0.0**
Tax Equivalency Payments	0.0	5.0	1.7	7.8	13.3	25.9	27.7	**81.5**
One-Time Revenue Sources								
Eastern Rail Yards Transferrable Development Rights	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Payments in Lieu of Mortgage Recording Tax	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
Payments in Lieu of Sales Taxes	0.0	0.0	0.0	0.0	0.0	0.0	0.0	**0.0**
District Improvement Bonus	11.1	57.9	6.9	4.5	0.0	4.6	3.0	**88.1**
Total Revenue from Development	$11.1	$62.9	$8.6	$12.3	$13.3	$30.6	$30.6	**$169.5**
Investment Earnings on Bond Proceeds	$0.1	$43.3	$127.3	$57.6	$20.0	$2.6	$1.4	**$252.2**
Total Revenue Before Interest Support Payments	**$11.2**	**$106.2**	**$135.9**	**$70.0**	**$33.3**	**$33.2**	**$32.0**	**$421.7**

SOURCE: Hudson Yards Infrastructure Corporation Financial Statements, fiscal years 2006-2012
NOTE: Totals may not sum due to rounding.

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Revenue and Interest Expenses of the Hudson Yards Infrastructure Corporation *Dollars in millions*								
	2006	**2007**	**2008**	**2009**	**2010**	**2011**	**2012**	**2006-2012**
Total Revenue Before Interest Support Payments	$11.2	$106.2	$135.9	$70.0	$33.3	$33.2	$32.0	**$421.7**
Interest Expenses	0.0	0.0	106.3	90.1	88.6	88.2	105.1	**478.4**
Surplus/(Deficit)	**$11.2**	**$106.2**	**$29.6**	**($20.2)**	**($55.3)**	**($55.0)**	**($73.1)**	**($56.6)**
Interest Support Payments	$0.0	$0.0	$0.0	$0.0	$15.0	$42.7	$79.3	**$137.0**

SOURCE: Hudson Yards Infrastructure Corporation Financial Statements, fiscal years 2006-2012
NOTE: Totals may not sum due to rounding.

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Cushman & Wakefield updated its interest support payment forecast in 2011, when it estimated that the city would be required to make $295 million in interest support payments for 2012 through 2018, beyond payments that had already been made by the city totaling $58 million.

Revenue Forecast

Using property tax data on buildings completed to date and building permit data on projects likely to be completed in the near future, IBO created a forecast of HYIC's revenue from PILOT and tax equivalency payments in 2013 and 2014. The forecast focuses on the recurring revenue sources for two reasons. First, payments from upfront development fees, bonuses, and the sale of transferrable development rights are difficult to forecast because they are not paid until a developer files for a building permit. Second, the refinancing covenants in the Hudson Yards Infrastructure Corporation's bonds are based on the recurring revenue sources, which the bond market considers to be a better indicator of the Hudson Yards Infrastructure Corporation's fiscal self-sufficiency.

PILOT Revenue. Even though the Related Companies began construction on its first office tower in the Eastern Rail Yard during 2013, that building is not likely to begin generating PILOT revenue for HYIC until 2017 or 2018. Related will also not pay any upfront fees other than its payment in lieu of the mortgage recording tax (expected in 2013, once the loan closes). Based on the zoning of the Eastern Rail Yard, Related does not have the option to purchase additional development rights from the DIB fund. Additionally, due to its location in the Eastern Rail Yard, Related cannot purchase any of the rail yard's transferrable development rights.

At the time of this report, no other properties have applied to the Industrial Development Agency to enter into a PILOT agreement. Developers have assembled a number of commercial development sites in the Hudson Yards area. If these buildings are constructed, the developers will ultimately pay PILOTs, though probably not until 2019 at the earliest. At least six sites comprising 11.4 million square feet of development rights are actively competing for tenants:

- Coach, Inc. plans to occupy 740,000 square feet of The Related Companies' 1.7 million square foot south tower, which is currently under construction. L'Oreal is leasing 402,000 square feet and SAP, a German technology company, is leasing 115,000 square feet. Related has yet to secure tenants for the remaining portion of the building.
- Related also continues to seek tenants for its 2.5 million square foot north tower in the Eastern Rail Yard.
- Brookfield Office Properties controls development rights on the Amtrak rail yards located between the MTA yards and Farley Post Office (covering the blocks from 8th Avenue to 9th Avenue). It has announced plans for two office towers totaling 3.2 million square feet and a platform over the yards.
- The Moinian Group is expected to break ground in 2014 on a 1.7 million square foot building on the west side of Hudson Boulevard between 34th and 35th Streets that could contain offices or a mixture of offices and residential or hotel development.
- Extell Development Company has released designs for a 1.3 million square foot office building along the west side of the Hudson Boulevard between 33rd and 34th Streets.
- Alloy Development has proposed a 1.1 million square foot building on the east side of the boulevard between 35th and 36th Streets.

With the exception of Related's south tower, none of these projects have announced that they have signed tenants or secured financing. If all of these buildings were completed and all the square footage was dedicated to office space (rather than residential, retail, or hotel), office development would total 11.4 million square feet. This would represent 45 percent of the 25.3 million square feet that Hudson Yards was rezoned to accommodate.

Tax Equivalency Payments. In addition to the 36 buildings already being counted for TEPs, four other new properties are scheduled to have their property taxes count as tax equivalency payments beginning in 2013. Included are two hotels and two residential buildings: the OutNYC/Axel on West 42nd Street, the TRYP by Wyndham on West 35th Street, a rental at 446 West 38th Street and a condominium at 433 West 37th Street. The estimated 2013 TEP for the four buildings is $1.2 million, with 88 percent coming from the two hotels. The remaining 36 properties that currently have their property tax revenue transferred to HYIC in the form of TEPs are estimated to have combined tax payments (including payments for prior years made in 2013) of $32 million in 2013. With the four new projects, the total TEP in 2013 is estimated to be $33 million.

Based on the tentative tax roll for 2014, these 40 properties are scheduled to see their taxes rise to $44 million in 2014. Their final property tax liabilities for 2014 will likely be slightly lower than that amount due to routine exemption processing, corrections, and reductions by the Tax Commission. Abatements and additional tax reductions via the Tax Commission may also reduce the property tax liability beyond the final tax roll.

Based on a review of new building permits issued between 2009 and 2012 and press accounts, IBO has identified 7 additional buildings that are currently under construction and will likely begin contributing TEP revenue in the near future, possibly 2014 or 2015, depending on when they receive a temporary certificate of occupancy. Because the timing of the temporary certificate of occupancy is uncertain, we did not include these buildings in the TEP projection at this time. The buildings are: two hotels on West 37th Street, one hotel on West 33rd, and four new buildings expected to be residential developments, including the 750,000 square foot residential tower being developed by the Extell Development Company on 41st Street and 10th Avenue. Additionally, the first building at the Brookfield Office Properties' Amtrak Yards site is now expected to be a residential tower that would ultimately qualify for a TEP; however, completion is likely to be later than 2015.

Projected Tax Equivalency Payments By Property Type
Dollars in millions

	Projected TEP Payments	
	2013	**2014**
Hotel	$14.3	$23.0
Rental	$8.3	$9.8
Condo (inc. 1-Family)	$8.3	$8.7
Commercial	$2.2	$2.3
Total	**$33.2**	**$43.6**

SOURCES: Department of Finance, Mayor's Office of Management and Budget
NOTES: Projected tax equivalency payments estimated by IBO based on payments made or expected in 2013 and tentative tax roll for 2014. Assumes no new buildings become eligible in 2014. Totals may not sum due to rounding.

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Looking Ahead

Through 2012, the Hudson Yards Infrastructure Corporation (HYIC) spent almost $2 billion on the 7 subway extension, land acquisition, and public amenities in the Hudson Yards area. Additionally, HYIC spent about $480 million on debt service for $3 billion dollars worth of bonds. Completion of the subway expansion is expected to cost up to an additional $786 million, while the city's capital plan includes another $77 million from HYIC for the public amenities. The city has committed $22 million in city funds for capital projects related to Hudson Yards and plans to commit another $79 million through 2022.

HYIC revenues for 2006 through 2012 have included $252 million in investment earnings, $137 million in interest support payments from the city, $88 million in district improvement bonuses, and $82 million in tax equivalency payments. Additionally, the city paid $156 million in interest support payments in 2012 that are intended for 2013 and part of 2014. Transfers from the city budget to HYIC total $374 million, including the interest support payments and tax equivalency payments.

IBO expects that additional interest support payments from the city will be required to cover annual HYIC shortfalls. One-time revenue, from the sale of development rights or district improvement bonuses, is particularly difficult to forecast because of the uncertain timing of major development projects. Given projected construction dates for office buildings in Hudson Yards, IBO expects recurring PILOT revenue will begin in 2017 or 2018 for the Related south tower and may increase beginning in 2019, if other office buildings under development begin construction in the near future. IBO forecasts that tax equivalency payments will increase to $33 million this year and $44 million in 2014.

Report prepared by Sean Campion

Endnotes

[1]These figures are in nominal dollars.
[2]HYIC's bond indenture dictates how the corporation can spend surplus revenue, how and when it can begin redeeming bonds, and the conditions it must meet before it can pay down principal. HYIC cannot redeem or purchase its bonds for approximately 10 years following the issuance of each of its bond offerings: February 15, 2017 for the 2007 bonds and February 15, 2021 for the 2012 bonds. After those dates, HYIC can use surplus funds to buy back bonds from bond holders at a price of 100 percent of principal, plus accrued interest.
Once HYIC meets certain revenue thresholds, it is required to establish a sinking fund, into which HYIC will set aside funds to pay off the principal that comes due when its bonds mature. As described in the bond indenture, the requirements are that HYIC's recurring revenue must meet or exceed 125 percent of debt service on its senior bonds for two consecutive fiscal years and its revenue in the current fiscal year must exceed the maximum debt service in all remaining years of the bond offering.
[3]In the December 2006 Hudson Yards Support and Development Agreement, the city agreed to appropriate in the Mayor's expense budget the difference between the interest due on HYIC's outstanding debt in the upcoming fiscal year and the amount of money that HYIC reasonably expects to be available for debt service payments in that year. That total is adjusted over the course of the fiscal year as revenue comes in.
[4]We are reporting both project expenditures from the $3 billion in bonds and debt service for those bonds in the same table, consistent with HYIC financial statements, even though that may lead to some double-counting.
[5]In September 2006, the city, HYDC, HYIC, and the MTA entered into a memorandum of understanding (MOU) for the extension of the 7 train that spelled out each party's responsibilities. The MOU listed the scenarios, referred to as Hudson Yards Modifications, in which the city, HYDC and HYIC would be responsible for paying for cost overruns. These scenarios include instances in which the city: fails to complete its project commitments; modifies the scope or design of the project for a number of reasons, including compliance with applicable laws and real estate development issues; forces delays in the project; or adds one or more supplemental items, including a station entrance from the midblock boulevard and park, a station shell at West 41st Street and 10th Avenue, or a station entrance from West 35th Street.
[6]The Mayor's Office of Management and Budget declined to provide IBO with a list of parcels that were acquired at this time because there are on-going negotiations regarding prices. Once all transactions are finalized, the Mayor's budget office indicated that the list would be available.
[7]See http://online.wsj.com/article/SB10001424127887323296504578396863718422762.html
[8]See http://www.nytimes.com/2013/01/16/realestate/commercial/developers-prepare-to-compete-for-tenants-in-hudson-yards.html?pagewanted=all
[9]The building permit was issued on November 27, 2012 and construction began in December 2012. However, the construction is not reflected on the tentative 2014 roll, which means that the first year of construction could be either 2014 or 2015. The nature of the tax lot further complicates the timing. While there is a commercial tax lot that is associated with the permit, it has no market value attributed to it. The market value is currently attributed to a Real Estate of Utility Companies (REUC) tax lot; unlike all other tax lots which are assessed by the city (tentative roll in January and final roll in May), REUC tax lots are assessed by New York State in April. Additionally, the city replaced the existing tax lots with new lots in February 2013 and assessment information will not be available until the final roll is released in May. It is not clear how the city will structure the tax lot and valuation to reflect the construction, though we expect the building to ultimately be shown as a number of condominium tax lots.
[10]The Mayor's Office of Management and Budget reviews the buildings' accounts for any payments or credits to taxes paid in prior years in the current fiscal year, such as a retroactive Tax Commission reduction in tax liability. This review is completed twice a year. The current year adjustments to prior years' taxes are combined with payments made during the current year for the current year liability to determine the TEP.
[11]The four parcels are 315 West 33rd Street (block=757 and lot=37), 400 West 37th Street (block=734 and lot=22), 430 West 33rd Street (block=729 and lot=163), and 609 West 29th Street (block=675 and lot=24). The lots recieved temporary certificates of occupancy in 2003 or 2004 that have been renewed on a regular basis. As of March 2013, three of the four lots have still have not recieved their final certificates of occupancy.
[12]According to the agreement, HYDC is charged with marketing and selling the development rights, while HYIC receives the revenue until HYIC recoups the cost of the purchase, plus interest.
[13]The annual interest due on a $200 million bond issued at a 5 percent interest rate is $10 million, paid in two installments of $5 million each. HYIC's 2007 bond offering was issued mid way through that fiscal year, which means that HYIC made one interest payment in 2007 and two payments in each year since. Assuming the $200 million in bonds were sold on these terms, HYIC will have paid $55 million in interest by the end of 2012. This means that the threshold for the MTA to begin receiving proceeds has risen to $255 million and will increase by an additional $5 million every six months.