

# ITMP25

# UHLELO LWESIKHASHANA LWESIFINYEZO SAMAPHUZU AVELELE

UKUHLOLWA, UKULUNGISELWA NOKUBUYEKEZWA KWENHLOSO-  
MBONO EYINHLOKO YEMINYAKA ENGAMASHUMI AMABILI NANHLANU  
YEZOKUTHUTHA OKUDIDIYELWE (ITMP25) YESIFUNDAZWE SASEGAUTENG



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### Isaziso kubo bonke Ababambe iqhaza Nabathintekayo Abanentshisekelo

Sicela uqaphele ukuthi okuqukethwe kwamathebula nezibalo kulo mbhalo akuhunyushwanga. Lokhu kungenxa yezinhlolo zesofthiwe ezisetshenziselwa ukukhiqiza ihluzo, ezingasekeli ukhumusha okuqondile ngaphakathi kwezibalo. Sibonga ukuqonda kwakho.

Ukuze uthole noma yikuphi ukucaciselwa noma usizo mayelana nokwaziswa okwethulwe, sicela ukhululeke ukuxhumana neHhovisi Lokubandakanya Ababambe iqhaza le-ITMP25 kuleli kheli le-imeyili elilandelayo: [itmp25@taggcr.co.za](mailto:itmp25@taggcr.co.za) noma [toni@pietersenpp.com](mailto:toni@pietersenpp.com)

ISAKHIWO - NGENXA YOKUPHAWULA

## 1. Isingeniso

I-GIBB yaqokwa yi-Transport Authority for Gauteng (TAG) ukuba ihlole, ilungiselele futhi ibuyekeze inhloso-mbono eyinhloko yeminyaka engamashumi amabili nanhlano yezokuthutha okudidiyelwe (ITMP25) yesifundazwe saseGauteng. Inhloso-mbono Eyinhloko Yase-Gauteng Yeminyaka Engu-25 Yezokuthutha Okudidiyelwe ka-2013 (25 Year Gauteng Integrated Transport Master Plan [GITMP25]) yasungulwa wuMnyango wase-Gauteng Wemigwaqo Nezokuthutha (Gauteng Department of Roads and Transport (GDRT)) ngo-2013. I-GITMP25 ye-Gauteng yachaziisa ngemsebenzi enohlonze ngeezokuthutha kanye nezinhlelo okumelwe ziqaliswe eminyakeni engu-25 elandelayo kuze kufike unyaka ka-2037. Ngaphezu kwe-GITMP25, uMbiko Wokufezekisa Kwezokuthutha We-Gauteng Weminyaka Engu- 5 (5-Year Gauteng Transport Implementation Plan [GTIP5]) wasungulwa. I-TAG kanye ne-GDRT sebeyihlolile futhi bayibuyekeza i-GTIP5, futhi baphothula ukuhlolwa nokubuyekizwa kwe-GITMP25 yeSifundazwe saseGauteng ngokweminyaka engu-25 elandelayo, lokho okuhloliwe futhi kwabuyekizwa okubizwa ngokuthi iNhloso-mbono Eyinhloko Yeminyaka Engu-25 Yezokuthutha Okuhlanganisiwe (25 Year Integrated Transport Master Plan [ITMP25]).

I-ITMP25 ye-Gauteng iyidokhumenti esemqoka ehlose ukokhela inhansi yempumelelo ye-GDRT ukuba ikwazi ukuqondisa, ukuhlela nokuthuthukisa uhlelo lwezokuthutha olusebenza kahle noluphucukile olwanelisa izithakazelo zomphakathi ngokuphucula ezokuhamba kanye nokuhlinzeka ngezinkonzo eziphephile, ezinokwethenjela, kanye nomoya ophefumulwayo ovikela okuphilayo, ezokuthutha ezihamba ojantshini nezokuthutha ezihamba emgwaqweni nezomphakathi ezizimele. Inhloso-ngqangi ye-ITMP25 wukuhola iSifundazwe saseGauteng ukuze sifinyelele ohlelweni lwezokuthutha olwanelisa izidingo ngokweqophelo eliphezulu olweseka kwezomnotho, ezenhlalo, ezamasiko kanye nezemvelo.

Umbono we-ITMP25 iphawulwe ngezansi:

*“Ukuze kusungulwe uhlelo lwezokuthutha olusimeme, olukwazi ukumelana nezingqinamba, olusebenzayo, olusebenzisa izindlela ezingcono kakhulu kunezakuqala, oludidiyelwe futhi oluthuthuke kakhulu kwezobuchwepheshe bethekholoji oluthuthukisa izinga lempilo, olweseka ukukhula kwezomnotho futhi okunethonya ekusetshenzisweni komhlaba kuyilapho kwehlisa umthelela ongemuhle endaweni yezemvelo ngokushintshela kwenye into yokuhamba ukuze kuxhumanise abantu, izindawo, nemikhiqizo, ngendlela engambi eqolo futhi ngokulinganayo.”*

I-Gauteng, yisifundazwe esincane ukuzedlula zonke izifundazwe eziyisishiyagalolunye zeNingizimu Afrika, sisezingxenyeni zentshonalanga-nyakatho zeNingizimu Afrika. Nakuba u-1.5% womhlaba wezwe, i-Gauteng eyidolobha iyikhaya lenani labantu abangaphezu kwikota yeNingizimu Afrika futhi inedolobha laseGoli elikhulu ukuwedlula wonke, nonhlokodolobha yalo yesishayamthetho, iPitoli, kanye nezinye izindawo ezinkulu ezifana neMidrand neVanderbijlpark (GCRO, 2021).

I-Gauteng iyisikhondlakhondla kwezomnotho zaseNingizimu Afrika, ikhiqiza u-35% we-GDP yeNingizimu Afrika futhi njengamanje iwumnotho wesikhombisa kwemikhulu kuZwekazi le-Afrika. Izimboni ezingoshaya kuzwele ekukhuleni kwezomnotho ngezamabhizinisi, izinsizakalo zezezimali kanye nezokuhwebelana kwezezakhiwo nezindlu zokuhlala. Umnotho weGauteng wabikezelwa ukuba ukhule ngo-4.7% ngo-2021 ngemva kokwehla ngo-8.2% ngo-

2020. Okwamanje, kunokwehluka phakathi kwezilinganiso zokukhula komnotho kanye nesibalo sabantu.

Umngcele weGauteng oseningizimu wuMfula i-Vaal, oyihlukanisa ne-Free State. Uphinde ugudle i-Northwest ukuya ngasentshonalanga, ushiya iLimpopo kwelasenyakatho bese ubeka iMpumalanga kwelasempumalanga. I-Gauteng yisona sifundazwe kuphela eNingizimu Afrika esingahlanganyeli umngcele nelinye izwe.

IyiNdawo yeDolobha Lomgangatho Wamazwe Ngamazwe ingaphansi kweSifundazwe se-Gauteng isiyi yathuthuka ngabantu abaningi abafudukela khona. Le Ndawo Yedolobha Lomgangatho Wamazwe Ngamazwe ihlanganisa oMasipala BeDolobha abathathu kanye noMasipala BeSifunda ababili esifundazweni kanye noMasipala Bendawo phakathi nezifunda zabo, ngokuhlangene nabanye omasipala ezifundazweni eziseduzane. Ezokuthutha zigeleza ngokushelela zinqamula imingcele yomasipala neyesifundazwe kanye nezindawo esezidlondlobale zaba yimixhantela yamadolobhana asebenza **njengendawo yinye yezokuthutha** mihla namalanga.

Ngezinjongo zokuqondisa, i-Gauteng inoMasipapa beSifunda ababili (iSedibeng neWest Rand) kanye noMasipala Bedolobha abathathu (uMasipala Wedolobha laseTshwane, uMasipala Wedolobha laseGoli kanye noMasipala Wedolobha lase-Ekurhuleni). UMasipala Wendawo yase-Emfuleni, uMasipala Wendawo yaseLesedi kanye noMasipala Wendawo yaseMidvaal bawela ngaphansi kukaMasipala Wesifunda saseSedibeng. UMasipala Wendawo yaseMerafong, uMasipala Wendawo yaseMogale City kanye noMasipala Wendawo yaseRand West City bawela ngaphansi kukaMasipala Wesifunda waseWest Rand.

Ngokukhula okuqhubekayo komnotho waseGoli, isidingo sabantu abadinga ukuya ezindaweni ngezindawo, ukuthuthwa kwezimpahla nezinsizakalo kuyaqhubeka kwanda. Lokhu sekuholele ezingeni nasesikhathini eliqhubeka njalo sanda sokucinana kwemizila yezimoto emigwaqeni, ukwehla kwemikhiqizo yasemisebenzini kanye nokwanda emtheleleni ezokuthutha ezinawo endaweni yezemvelo kanye nokwehla kwezinga lempilo kubantu abahlala kule ndawo. Ngokungefani nezinye izixazululo, izinselele zezokuthutha esifundazweni kungase kubhekanwe nazo ngokunegqondo ngokuhlela nokuqalisa ezokuthutha ezididiyelwe zomphakathi zesifundazwe sonkana kanye nezokuthutha okungezona izimoto ukuze kuthuthukiswe ukusetshenziswa kwezindlela zezinto zokuhamba ezingenayo imithelala emibi.

INingizimu Afrika kanye neSifundazwe saseGauteng ikakhulukazi sekuphenduke kaba yisigodi sempucuko yezinga lamazwe omhlaba jikelele. Indawo ezungezile iye yashintsha ngokuphawulekayo eshumini leminyaka elidlule futhi ziningi izimbangela ezinethonya kulokhu futhi nezishintsha indlela umkhakha wezokuthutha obukeka ngayo.

Kulindeleke ukuthi kungakedluli u-2025, u-60% wabantu bamazwe omhlaba jikelele bazobe bephila ezindaweni zasemadolobheni (UITP). Umphumela walokhu kufuduka okusheshayo kwabantu bethuthuleka emadolobheni kanye nezentuthuko yezomnotho kuyisidingo esesandile sabantu beya ezindaweni ngezindawo, ukuthuthwa kwezimpahla nezinsizakalo. Ngokuthi akucishe kufane nokuvame ukwenziwa emazweni omhlaba jikelele, izimoto okungezomuntu ngamunye ngamunye ziyindlela encanyelwayo yokuhamba noma ziqhubeka ziyindlela encanyelwayo yokuhamba eGauteng futhi lokhu kubangela ukwanda okwengeziwe kokucinana kwemizila yezimoto emigwaqweni, ukungcola kwendawo yemvelo, izinhlekelele zezimoto emigwaqweni kanye nokuthembela kakhulu kowoyela wokumbiwa phansi. Ukufudukela ezindaweni zasemadolobheni nakho ngokungenakuvinjelwa sekuphinde



kwaholela 'KumaDolobha Asebenzisa Kakhulu Ubuchwepheshe Bezedijithali' (Smart Cities) kanye nokuthembela kakhudlwana kubuchwepheshe obusingatha futhi buhlaziye iminingwane (Information and Communications Technology [ICT]).

Akunakungatshazwa ukuthi ukushintsha kwamazinga okushisa wembulunga yomhlaba kungenye yezinsongo eziphawulekayo ekusaseni labantu. Isidingo esandile yokuhamba sinomthelela omkhulu endaweni yezemvelo ngenxa yokungcoliswa komoya kanye namagesi asemkhathini abamba ukushisa, kuyilapho ezemboni yezokuthutha zibhekwa ngabaningi njengonobangela walokhu. Umkhakha wezokuthutha unesandla ku-18% wamagesi asemkhathini abamba ukushisa abangelwe ngabantu. Uma kucatshangelwa ukuthi izimoto okungezomuntu ngamunye ngamunye ezisemhlabeni jikelele kulindeleke ukuthi ziphindaphindeke kathathu kungakedluli u-2050, ubungako bentuthu ekhishwa yizinto zokuhamba kulindeleke ukuthi yande ukwedlula yinoma yimuphi omunye umkhakha. Umkhakha wezokuthuthwa komphakathi wonga kakhulu umgibeli ngamunye ukudlula izimoto okungezomuntu ngamunye ngamunye. Khona-ke, ukugqugquzelwa kokusetshenziswa kwezinto zokuhamba okungezomphakathi nezingezona ezohlobo oluyimoto kufanele kuhole kule mpi elwisana nokushintsha kwamazinga okushisa wembulunga yomhlaba. Ezokuthuthwa komphakathi kanye neZinto Zokuhamba Okungezona Izimoto (Non-motorised Transport [NMT]) kudlala indima enkulu ekuhlinzekweni kwezixazululo zezinto zokuhamba ezingabangi umonakalo endaweni yezemvelo kanye nokudanjiswa kwamagesi we-carbon dioxide.

Kubalulekile nokubhekana nezinguquko eziqaphelekayo ezimweni zezulu emhlabeni wonke ohlelweni lwezokuthutha. Ukwakhiwa kwezindlela ezikwazi ukumelana nezinselele kanye nemishophi engase ivele esikhathini esizayo zakhelelwe ukuze kunqandwe izigigaba ezibucayi zezimo zezulu, njengezikhukhula, ukushisa okunamandla kakhulu noma ukubanda ngokwedlulele.

Siphila eNkathini Yentuthuko Esheshayo Yekhulu Leminyaka Lika-21 (4th Industrial Revolution [4IR]). Lena yinguquko yezimboni yokuqala esekelwe kubuchwephashe obusha bezetheknoloji, okuwukuthi ezokusebenza kwedijithali, kunokuvula kohlobo olusha lomthombo wamandla. Ubuchwepheshe bezedijithali busiza ekwakheni umhlaba ozisekelo zawo zisesigabeni sezedijithali nalapho umhlaba obonakala ngamehlo ungasingathwa khona.

Umphumela omkhulu weNkathi Yentuthuko Esheshayo (4IR) embonini yezokuthutha wukuvula kobuchwepheshe obugudluzela eceleni izindlela ezidla ngoludala. Lolu shintsho luvula kumabhizinisi avumelisana nezimo nasebenzisa ubuhlakani okungasebenzisi izindlela zakuqala kunalokho kusetshenziswa izinkundla zobuchwepheshe bezedijithali zezinga lamazwe ngamazwe ezisusa konke okuqhwa esikhundleni ngokwenza okusezingeni eliphezulu, isivinini sokwenziwa komsebenzi kanye namanani kueb ngcono, kanjalo nokumatanisa izinsizalalo zawo ukuba zisebenzisane nezinkundla zokukhokha okulula ukuzisebenzisa. Ithuba elikhulu embonini yezokuthutha elihlobene nokufika kweNkathi Yentuthuko Esheshayo (4IR), wukuba khona nokusingathwa kwamaQoqo Eminingwane Eyinkimbinkimbi (Big Data) nokungase kube negalelo elikhulu ekuhlelweni nasekusingathweni kwezinhlelo zengqalasizinda yezokuthutha kanye nezinhlelo ezihlobene nazo.

Izintuthuko zeNkathi Yentuthuko Esheshayo (4IR) kuzoletha kokubili izinselele namathuba kwezemisebenzi. Njengoba kunezinselele zokuntuleka kwemisebenzi eNingizimu Afrika naseGauteng, amathuba avela eNkathini Yentuthuko Esheshayo kudingeka asetshenziselwe ukwakha imisebenzi emisha.

Ukungqubuzana ngamakhanda kwezengxube yezepolitiki nezomhlaba kanye nokungaqiniseki okukhona, okusanda kuvela njengomphumela wempi yase-Ukraine sekuye kwaba nomthelela ezindlekweni zemithombo yamandla afana nogenesis, uwoyela namandla avuselelekayo, izindleko zokuphila kanye nokwehla kwamandla emali. Lokhu kuholele ekufuneni ukuncika kwezinga eliphansi kuwoyela namafutha emvelo njengemithombo eyinhloko yamandla kanye nesivinini ekusetshenzisweni kweminye imithombo esimeme yamandla. Lokhu kuzoqhubeka nokuba nomthelela, kodwa futhi kuzoba nezinzuzo embonini yezokuthutha.

Uhulumeni WeSifundazwe wamukele inqubomgomo ye-Growing Gauteng Together 2030 ukuze kubhekanwe nezimo ezikhona kanye nenhloso yokuqothula ububha nokungalingani, ukukhuthaza kwamathuba emisebenzi, i-Broad-Based Black Economic Empowerment (BBBEE), ukuxhasa ukukhula komnotho ezindaweni zasemalokishini nokugqugquzela ukuphakelwa kwamathuba aye kubesifazane nentsha. Indlela yokuthuthukiswa kohlelo lwezokuthutha eGauteng idinga ukuxhasa le nqubomgomo.

Uhlelo Lokuthuthukiswa Ndawonye kwe-Gauteng KuMinyango NgeMinyango (Departmental Growing Gauteng Together [GDRT]) ngoHlelo lwe-Smart Mobility 2030 lwahlanganiswa ngokusabela ekuThuthukisweni Ndawonye kwe-Gauteng KuMinyango NgeMinyango 2030. Isisekelo salolu hlelo ukwakheka kabusha komumo wezasemadolobheni, ukwenza i-Gauteng ibe yisikhungo sezokuthutha kwezimpahla, ukusetshenziswa kwemininingwane yolwazi nezetheknoloji ukuthuthukisa ukuthuthwa kwezimpahla nokuhamba kwabantu nokwakha izikhungo ezingenakunyakaziswa.

Inqubomgomo Kazwelonke Yezemizila Yezitimela ka-2022 isimukelwe, lokhu ohlinzeka ngesisekelo sokwenziwa ngcono kwendlela abantu abahamba ngayo ngesitimela nendlela izimpahla ezithuthwa ngayo ngemizila yezitimela. Ngokuhamba kwesikhathi kanye nokumenyenzelwa koMthetho Kazwelonke Wezemizila Yezitimela ophakanyisiwe ukuze kuqaliswe le nqubomgomo, lokhu kungase kube nomthelela omkhulu ikakhulukazi ekusingathweni kwezitimela zabagibeli esifundazweni.

Uhlelo Lokusebenza Lwezokuthutha Ezihamba Phansi ZeSifundazwe saseGauteng (Gauteng Provincial Land Transport Framework [PLTF]) lwahlelwa ngokwemigomo ye-National Land Transport Act 5 ka-2009 (NLTA) kanye neMihlahlandlela Ehlobene Nezimfuneko Zesibalo Esifanele Ngokuhlelwa KweziHlakala Zesifundazwe Zohlelo Lokusebenza Kwezokuthutha Ezihamba Phansi (Minimum Requirements for the Preparation of Provincial Land Transport Frameworks zika-2011. Inhloso-mbono Eyinhloko Yase-Gauteng Yeminyaka Engu-25 Yezokuthutha Okudidiyelwe.

Inhloso-mbono Eyinhloko Yase-Gauteng Yeminyaka Engu-25 Yezokuthutha Okudidiyelwe kufanele iqondise ukuthuthwa kwezinqumo eziphusile futhi icobebele ngolwazi, isekele futhi isize ngokuqaliswa koHlaka Lokusebenza Lwezokuthutha Ezihamba Phansi (PLTF) kanjalo namasu womasipala okufezekiswa asesunguliwe kakade. Ngakho-ke, amaphuzu abalulekile okusebenzisa kahle uHlelo Lokusebenza Lwezokuthutha Ezihamba Phansi (PLTF) olukhona kanye namanye amasu omasipala nesifundazwe okufezekiswa kwemisebenzi kwacatshangelwa.

Izigaba okumelwe zidingidwe ngokubheka kweso likazwelonke ngezilandelayo:

- Ukukhula kwezomnotho okungabandlululi nokusungulwa kwamathuba emisebenzi
- Ukudambisa ububha nezindleko eziphezulu zokuphila; kanye

- Nokusungula izimo esikwazi ukusebenziseka nesezokuziphatha okufanele.

Okuhlalu okubekwe eqhulwini ngeSifundazwe saseGauteng ngokulandelayo:

- Ukuvuselelwa kabusha kanye nokudlondlobala kwezomnotho
- Ukuthuthukiswa kwezindawo zasemalokishini, imijondolo kanye namahostela (townships, informal settlements, and hostels [TISH]);
- Ukulwisana ngamandla nobugebengu, inkohlakalo, ukecekela phansi, nokuphulwa komthetho;
- Ukubekwa phezulu kwezezimo zempilo kanye nempilo engcono yemiphakathi; kanye
- Nokuphakela amandla kahulumeni ukuze kuhlinzekwe ngezinsizakalo.

Izici okumelwe zidingidwe ngokubheka kweso lesifundazwe ngezilandelayo:

- Uhlelo Lwezendawo Zasemalokishi, Imijondolo Namahostela;
- Ukuvuselelwa Kwesifunda Senkaba Yezamabhizinisi (Central Business District [CBD]) (njengePitoli, eGoli, eRoodepoort naseKempton Park);
- Izinhlobo zemizila yokuhamba ehlanganisa ezihlanganisa izindawo zendima enamandla kwezomnotho nezokuthutha ngaphakathi nangaphandle kweSifundazwe (Krugersdorp, Rustenburg neSasolburg);
- Ukugxila eZindaweni Zemithetho Ekhethekile Ukuheha Ezamabhizinisi Nokuchuma Kwezomnotho (Special Economic Zones [SEZs]), kuhlanganise nendawo yendima enamandla kwezomnotho nezokuthutha yaseLanseria;
- Ukubhekana nenkinga yodlame kwezamatekisi; kanye
- Nokuqeqeshwa Nokuthuthukiswa Kwezamakhono phakathi neSifundazwe kanye nomasipala baso.

## 2. Ezokufakana Imilomo Nokubandakanywa KwaBabambiqhaza

Injongo yalesi Sifinyezo Samaphuzu Avelele ngukunikeza uhlelo lwenqubo yokubandakanywa kwababambiqhaza olulandelwayo phakathi nokuhlola, ukulungiselela, kanye nokubuyekeza iNhloso-mbono Eyinhloko Yeminyaka Engamashumi Amabili Nanhlanu Yezokuthutha Okudidiyelwe YaseGauteng ngeminyaka engu-25 elandelayo. Ingxenye yokubandakanywa Kwababambiqhaza iphinde ihlinzeke ngokuhlaziywa okuningiliziwe kwababambiqhaza, abadlali-ndima abasemqoka, imisebenzi yabo yokuzibandakanya, kanye nezinyathelo ezilandelayo enqubweni.

Inqubo yokubandakanywa kwababambiqhaza emisebenzini ehluhahlukene efana nokwakhiwa koHlelo Lokubandakanywa KwaBabambiqhaza, ukuhlaziywa kwababambiqhaza, ukwabelana ngolwazi nabantu abafisa ukwazi nabathintekayo (Interested & Affected Parties [I&APs]) kanye nabadlali-ndima abasemqoka (key role-players [KRPs]), kanye nokuthola izimvo nokuphawula kwababambiqhaza. Ingqikithi yezinhlangano ezingu-1,012 ezimelele imikhakha ehluhahlukene yomphakathi yafakwa kudathabheyisi yababambiqhaza lwabathintekayo, kanti nezinhlangano ezingu-130 ezaphawulwa njengezidlala indima esemqoka. Amathuba okubandakanywa kwababambiqhaza ahlanganisa izingqungquthela zabadlali-ndima abasemqoka, imihlangano yabakhethiwe abambalwa, kanye nemihlangano yomphakathi eqhutshwa enkundleni yekhompuyutha yalabo abafisa ukwazi nabathintekayo.

Inqubo yokuzibandakanywa kwababambiqhaza iphinde ichaze izindlela zokwaziwa ukuthi abadlali-ndima abasemqoka ngobani kanye nokuthi bangobani abafisa ukwazi nabathintekayo, ababambiqhaza, abadlali-ndima abasemqoka kanye nababambiqhaza abanethonya elikhulu. Iphinde ixoxe ngohlaka lokusebenza lokuqondisa nelokubekwa komthetho okumayelana nokubandakanyeka kwababambiqhaza, kuhlanganise nokuphawulwa kwe-Gauteng Transport Authority Act, i-National Land Transport Act, i-Promotion of Administrative Justice Act, noMthethosisekelo weRiphabhulikhi yaseNingizimu Afrika, kanye neminye imithetho nemithethonqubo.

Izinyathelo ezilandelayo kule nqubo yokubandakanywa kwababambiqhaza ihlanganisa ukwenza uHlelo lwe-Nhloso-mbono Eyinhloko yaseGauteng Yeminyaka Engu-25 Yezokuthutha Okudidiyelwe (25 Year Integrated Transport Master Plan [ITMP25]) ukuba lutholakale emphakathini ukuze luhlolwe futhi kuphawulwe ngalo. Lokhu kuhlanganisa ukwaziswa kwabo bonke abafisa ukwazi nabathintekayo kanye nabadlali-ndima abasemqoka, amaphephandaba ashicilela izikhangiso, ukuphosta uhlelo lwe-GITMP25 kuwebhusayithi yephrojekthi nakuwebhusayithi ye-GITMP25, ukubamba imihlangano nabadlali-ndima abasemqoka ukuze kwethulwe okuqukethwe ohlelweni lohlelo, nokubamba umhlangano osenkundleni ye-computer nalabo abafisa ukwazi nabathintekayo ukuze kwethulwe okuqukethwe ekuphawuleni nasezimvweni zabo. Konke ukuphawula nezimpendulo kuzofakwa oHlwini Lwezimpendulo, futhi i-GITMP25 ebuyekeziwe izokwethulwa ku-MEC Wezemigwaqo Nezokuthutha wase-Gauteng.

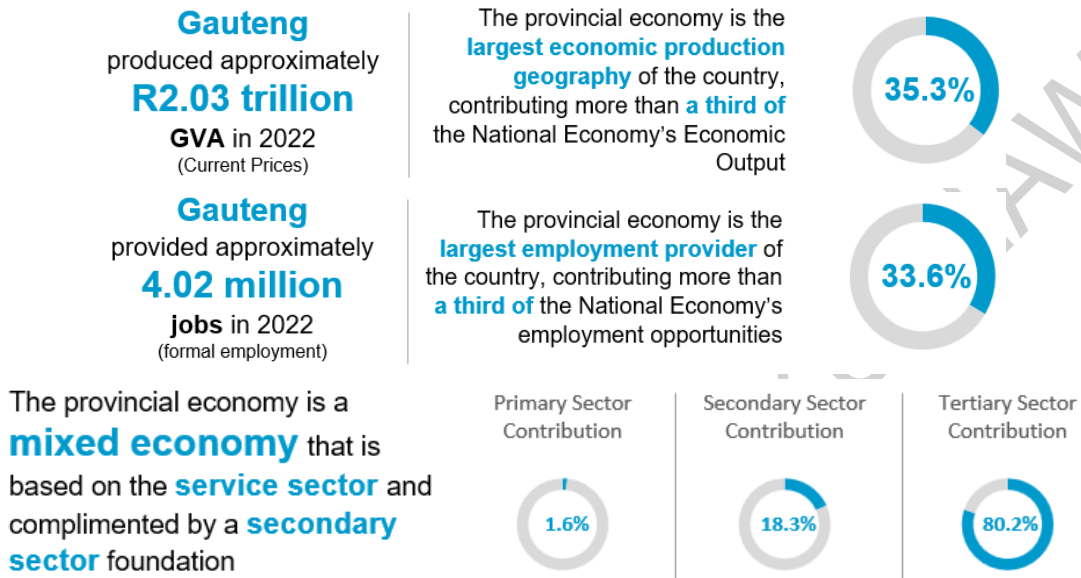
Sekukonke, lesi ngxenye ichaza ngokuningiliziwe ngenqubo yokubandakanywa kwababambiqhaza nezinyathelo ezithathwayo ekuhloleni, ekulungiseleleni nasekubuyekezeni iNhloso-mbono Eyinhloko yaseGauteng Yeminyaka Engu-25 Yezokuthutha Okudidiyelwe eGauteng, iqhakambisa ukubaluleka kokubambisana nokuphawula okuvela kubabambiqhaza ukuze kufinyelelwe imiphumela encomekayo yephrojekthi.

### **3. Ukuhlaziywa Kwesimo Samanje Sezomnotho Nesabantu kanye Nokucubungula Ukuhlelwa Kwalokho Okungase Kwenzake**

I-Gauteng iyisikhondlakhondla kwezomnotho zaseNingizimu Afrika, inegalelo elingaphezu kuka-35% kumnotho wezwe. Umnotho wakhiqiza izigidintathu (trillion) ezingu-R1.47 zenani lezimpahla nezinsizakalo okukhiqizwa endaweni nezamathuba emisebenzi (Gross Value Added [GVA]) futhi wadala imisebenzi engu-4 million ngo-2022. Umnotho wesifundazwe ngokuyinhloko uphakelwa umkhakha uhamba wezinsizakalo (services), ophosa esivivaneni okungaphezu kuka-80% kumnotho wenani lezimpahla nezinsizakalo okukhiqizwa endaweni nezamathuba emisebenzi. Izimboni ezihamba phambili ngezinsizakalo zamabhizinisi, izinsizakalo zomphakathi, ezohwebo lokuthengisela ngokuqondile amakhasimende izimpahla (retail trade), kanye nembali yezezimali.

Nakuba iGauteng inesisekelo esiqinile kwezokukhiqiza, isiye yabhekana nezinseselele eziningi eminyakeni yamuva ngenxa yezinto ezifana **nokuphazamiseka kokuphakelwa kukagesi (load shedding), izingqinamba zokuhlela, zokuthutha, zokugcina nokudiliwa kwezimpahla noma ukuhlinzekwa kwezinsizakalo, ingqalasizinda ewohlakayo, kanye nezinkinga zezomnotho zomhlaba jikelele.** Naphezu kwalezi zinseselele, lesi sifundazwe siye saziveza siyinsimbi engagobeki futhi siqhubekela phambili nokubeka induku ephawulekayo ebandla ekukhuleni komnotho weNingizimu Afrika.

**UMfanekiso 3.1** ongezansi ukhombisa isifinyezo sikasayizi wezomnotho wesifundazweni sase-Gauteng kanye namathuba emisebenzi asungulwe yilesi sifundazwe.



**Umfanekiso 3-1: Isifinyezo Sosayizi Nokwakheka Kwezomnotho WeSifundazwe SaseGauteng maqondana Nenani Lezimpahla Nezinsizakalo Okukhiqizwa Endaweni Namathuba Emisebenzi**

Ngokwendawo, iGauteng iyisifunda esinabantu abaningi kakhulu eNingizimu Afrika, esithatha cishe u-25% wabantu abasezweni. Lesi sifunda sihlangebazine nokukhula kwenani labantu ngokushesha, ngokwengxenywe okwabangelwa ukufuduka okukhulu kwabantu beya kuleli sifundazwe. Ukwanda kwabantu kukhule kwashesha kwadlula ukwanda kwezomnotho, osekuholele emkhakheni wezemisebenzi ohluleka ngokuphawulekayo ukumumatha abantu abadinga imisebenzi nosekubangele inani eliphezulu labantu abangasebenzi nenqwaba yalabo abathembeke kakhulu ezobonelelweni zikahulumeni.

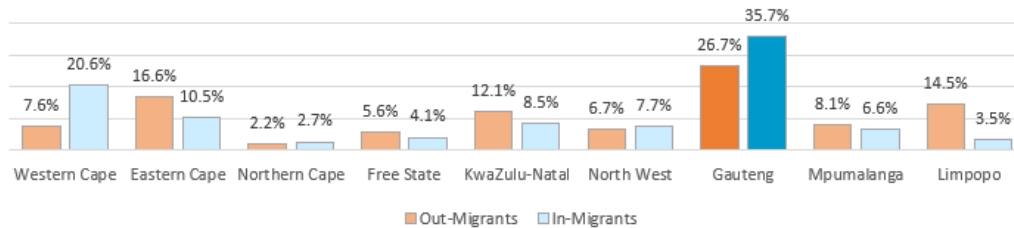
Izici eziyinhloko zenani labantu esifundazweni zihlanganisa:

- IGauteng iyisifundazwe esinabantu abaningi kakhulu eNingizimu Afrika.
- IGauteng isiyi yaba nokwanda okusheshayo kwabantu ngokwengxenywe ngenxa yabantu abaningi abafudukela kulesi sifundazwe.
- Ukuchuma kwezomnotho kwehlulekile ukuhambisana nezidingo zokwanda kwabantu, osekuholele egebene elandayo lokuntuleka kwemisebenzi.
- Amanani wabantu abangasebenzi aphezulu eGauteng, osekuholele emaholweni ezimali aphantsi ngokomuzi nomuzi kanye namanani aphezulu wabantu aphezulu wabantu abathembeke ezibonelelweni zikahulumeni.
- Imizi engaphezu kuka-49% eGauteng iphila ngenhlupheko, okukhombisa ngokucacile ukungalingani kwabantu okuphawulekayo esifundazweni.

**UMfanekiso 3-1** unikeza isifinyezo sengqikithi yenani labantu nemizi esifundazweni seGauteng.

	Total	New Since 2011	Avg. Annual Growth Rate
 Population	15 099 422	2 827 159	1.9%
 Households	5 318 665	1 409 839	2.8%

Distribution of Out-Migrants and In-Migrants based on their Province of Previous and Current Residence



Gauteng has the **Highest Net Migration Rate** in South Africa



out-migration

**35 998**  
people migrate from the province annually



in-migration

**72 303**  
people migrate to the province annually



net-migration

**36 305**  
Annual Net-Migration Rate

**UMfanekiso 3-1: Usayizi Wenani Labantu Esifundazweni Nodaba Lwezokufuduka**

Umthombo: DEMACON ex StatsSA, 2023

Uma kucatshangelwa lokho okuqaphelekayo okwandayo ngokuhlobene nokuhlaziywa kwesimo sezomnotho samanje, le ngxenye ichasisa ngokubili okungase kwenzeka okubili okuqhathanisekayo kodwa okungefani (okungenzeka nalokho okufiseleka ukuba kwenzeka) ngendlela ezomnotho ezihamba ngayo besifundazweni saseGauteng (phakathi kuka-2022 no-2047).

**UMfanekiso 3-2** uchaza ngezimo ezingenzeka nalezo ezifiseleka ukuba zenzeke zokuchuma kwezomnotho esifundazweni saseGauteng.

**Isimo Esingenzeka**

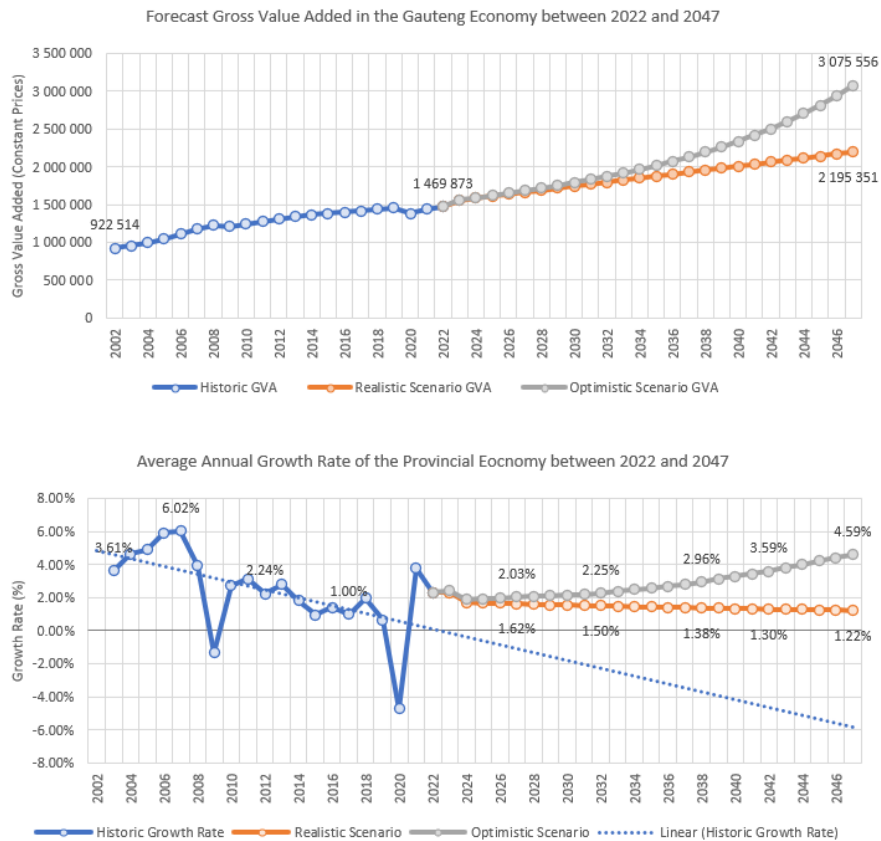
Isimo esingenzeka sisuselwa kokuphawulekayo okwandayo okukhomba ukuthi ukukhula komnotho kuzoqhubeka kuhleli endaweni eyodwa futhi kube kubi nakakhulu ngokuhamba kwesikhathi. Nakuba ezomnotho ziqhubeka zikhula, izici zizonke zezomnotho nezendawo zizoqhubeka zibeka umkhawulo kulokho okungase kufezwe yisifundazwe. Ngenxa yalokhu, lokhu kuzobeka umkhawulo ekukhuleni komnotho kuye endleleni ethi ayifane nesilinganiso sakamuva sokwanda

**Isimo Esifiseleka Ukuba Senzeke**

Isimo esifiseleka ukuba senzeke sisekelwe entuthukweni yesimo samabizini esifundazweni. Nakuba izinguquko emnothweni zivumela izimboni ezintsha nezetheknoloji entsha ukuba zingene emakethe, imikhakha evamile efana neyomkhiqizo kuyaqhubeka nokudlala indima ebalulekile kwezintuthuko. Ngenxa yalokhu, ezomnotho zesifundazwe zilindeleke ukuba zandise ukukhula kuye ngale kwendlela ezihamba ngayo njengamanje

**UMfanekiso 3-2: Ukuchazwa Kwezimo Zomnotho Ezingenzeka Nezifiseleka Ukuba Zenzeke**

**UMfanekiso 3-3:** unikeza isifinyezo salokho okubikezelwayo kwezimo zomnotho ngokuqondene nezimo ezingenzeka nalezo okufiseleka ukuba zenzeke ngomnotho waseGauteng.



**UMfanekiso 3-3: Okubikezelwayo Ngezimo Zomnotho**

Uma kucatshangelwa lokho okuqaphelekayo okwandayo ngokuhlobene nokuhlaziywa kwesimo samanje senani labantu, le ngxenye ihlose ukuveza izimo ezimbili eziqhathanisekayo kodwa ezingefani (okungenzeka nalokho okufiseleka ukuba kwenzeke) ngendlela inani labantu elanda ngayo esifundazweni saseGauteng (phakathi kuka-2022 no-2047).

**UMfanekiso 3-4** uchaza ngezimo ezingenzeka nalezo ezifiseleka ukuba zenzeke ngokwanda kwabantu esifundazweni saseGauteng.

**Isimo Esingenzeka**

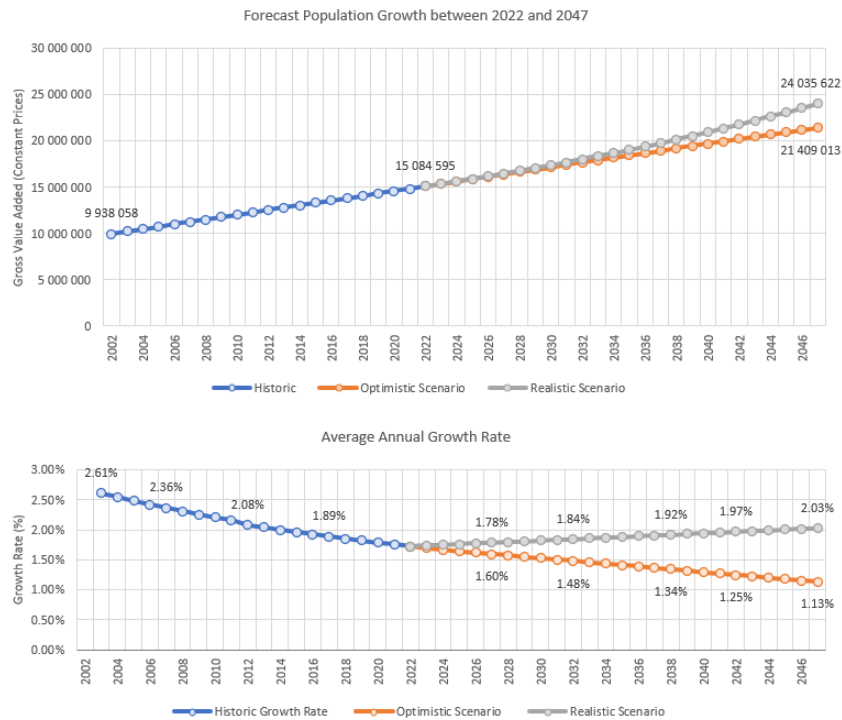
Isimo esingenzeka sisuselwa ekuqhubekeni kokuphawulekayo okwandayo kuyilapho kuqashelwa izici ezivela ngaphandle ezingase zibe nomthelela endleleni inani labantu esindazweni elikhula ngalo. Isimo sikhomba ukuthi isifundazwe seGauteng sizoqhubeka siyindawo abantu abaningi abazothuthelaka kuyo kunokuthi baphume kuyo, futhi lokhu kufuduka kuzoba nomthelela enanini labantu nasendleleni ezomnotho ezimi ngayo

**Isimo Esifiseleka Ukuba Zenzeke**

Isimo esifiseleka ukuba zenzeke ngukwehla kokwanda kwabantu eGauteng ngenxa yabantu abangebaningi kakhulu abathuthelaka esifundazweni, inani elehlayo lokuzalwa kwabantu, kanye nabantu abaphila isikhathi esijana. Izimo ezingcono zomnotho kwezimye izifundazwe, lapho abantu ngangcono bethola khona imisebenzi, izinsizakalo (services), kanye namathuba, bese kwehla isibalo sabantu abathuthela eGauteng

**UMfanekiso 3-4: Ukuchaza Izimo Ezingase Zenzeke Nezifiseleka Ukuba Zenzeke Ezimayelana Nenani Labantu**

**UMfanekiso 3.5** unikeza isifinyezo sokubikezelwayo ngezimo sezomnotho maqondana nezimo ezingenzeka nezifiseleka ukuba zenzeke zomnotho waseGauteng.



**UMfanekiso 3.5: Okubikezelwayo Ngezimo Zenani Labantu**



#### 4. Ukusetshenziswa Komhlaba Nokuhlaziywa Kwesimo Samanje Sokuhlelwa Kwezindawo Zokuhlalwa Nalokho Okungase Kwenzeke Esikhathini Esizayo

Inhloso-mbono Eyinhloko Yezokuthutha Okudidiyelwe yase-Gauteng (Integrated Transport Master Plan [ITMP25]) ichaza ngesu-mgomo eliningiliziwe lokuphumelelisa umsebenzi ukuze kwakhiwe uhlelo lwezokuthutha oludidiyelwe, olusebenza ngempumelelo, nolungenayo imithelela emibi olweseka izinhloso zesifundazwe zezindawo okuhlalwa kuzo nezomnotho. Njengesifundazwe saseNingizimu Afrika esinabantu abaningi kakhulu ukwedlula ezinye nesichumile kakhulu ngokwezomnotho, iGauteng ibhekene nezinseselele ezingefani nezinye ezifana nokukhula ngesivinini kwedolobha, ukungalingani kwesikhathi esidlule ngendlela umhlaba osetshenziswa ngayo, kanye nezinkinga ezivamile nengqalasizinda, ikakhulukazi kwezobunjiniyela.

I-ITMP25 ihlose ukubhekana nalezi zinkinga ngokukhuthaza **ukusetshenziswa komhlaba okuvumelanayo nokudidiyelwe kanye nokuhlelwa lwezokuthutha**, ukuthuthukisa uxhumano, kanye nokwakha izindawo eziseduze futhi ezixhumene kahle ezihambisana nokukhula komnotho kanye nokuthuthukiswa kwezomphakathi.

Umasipala ngamunye eGauteng unezinseselele ezingefani nowezabanye omasipala kanye namathuba achazwe oHlakeni Lokusebenza Lokuthuthukiswa Kwezindawo Zokuhlalwa (Spatial Development Frameworks [SDF]) yayo. I-Ekurhuleni igxile ekwakheni idolobha elizungeze iSikhumulo Sezindiza Samazwe Ngamazwe sase-OR Tambo kanye nokusebenzisa indawo yayo ebalulekile ukukhuthaza ukukhula komnotho nokudala amathuba emisebenzi. Isu lokufezekisa umsebenzi ledolobha laseGoli ligxile ekubhekaneni nokungalingani kwezenhlalo nezomnotho ngokwandisa inani lemizi ezindaweni ezithintekayo nokwandisa ezokuthuthwa komphakathi ukuze kwenziwe ngcono ukufinyelela izinsizakalo namathuba emisebenzi. ITshwane, ehlanganisa kokubili idolobha nezindawo zasemaphandleni, ihlose ukusungula izikhungo zokudlondlobala nokwandisa uhlelo lwe-BRT ukuze kube nezindawo ezixhumayo kwezokuthutha. ESedibeng naseWest Rand, lapho amathuba omnotho elinganiselwe futhi kumazinga wobubha aphezulu, izinhlelo zabo kanye nezomasipala bendawo abangaphansi kwazo, kuphakamisa amaphrojekthi woguquko olukhulu okufukula ezomnotho zendawo nokuthuthukisa ukuxhumaniseka nezindawo zedolobha.

Ukuguqula imigomo yentuthuko yoHlaka Lokusebenza Lokuthuthukiswa Kwezindawo Zokuhlalwa kube yinto ephathekayo ngokwezidingo zokusetshenziswa komhlaba, kwasungulwa izimo ezimbili zentuthuko zisungulelwa i-ITMP25. Zimi kanje: isimo **esingenzeka nesimo esifiseleka ukuba senzeke**, ezisuselwa kokuphawulekayo okwandayo okubikezelwayo kwezomnotho nokwanda kwenani labantu ukuze kubikezelwe isidingo sesikhathi esizayo sokusetshenziswa komhlaba kanye nezidingo zengqalasizinda yezokuthutha. Lezi zimo ziwunkhombandlela wokuhlela ezentuthuko yezindawo zokuhlala, yezentengiselwano, kanye nezimboni, kuqinisekise ukuthi ingqalasizinda iyakwazi ukuhlangabezana ukwanda kwesikhathi esizayo. Le ndlela isiza ngokuhlela kusasenesikhathi

okuzivumelanisa nokuguquguquka kwezinto futhi kweseke intuthuko esimeme kuso sonke isifundazwe.

Umehluko oyinhloko ekubikezelweni kwesidingo sokusetshenziswa komhlaba phakathi kwesimo esingenzeka nesifiseleka ukuba senzeke kusebungakweni bezindawo zamanje nezesikhathi esizayo ezizokwakhelwa ukuba imindeni ihlale kuzo noma zisetshenziselwe ukukhulu kwezomnotho. Ekubikezelweni kwesimo esingenzeka, ukwanda okusheshayo kwabantu kuholela ekwandeni kwezithinta izindawo zamadolobha nokwanda kwabantu nezakhiwo okusemaphethelweni esifundazwe, kuyilapho esimweni okufiseleka ukuba senzeke, ukwanda okuhamba ngonyawo lonwabu kugxile ekuthuthukiseni izindawo ezikhona kakade nokwandisa inani lemizi nezakhiwo. Ngokokukhula kwezomnotho, ukubikezela kwesimo esingenzeka kulindele ukukhulu okuhamba ngonyawo lonwabu, okugxile kwezentuthuko yezomnotho endaweni eyinkaba yesifundazwe. Ngokuhlukile, ukubikezela kwesimo esifiseleka ukuba senzeke sikhomba ukwanda okusheshayo, kusabalalise intuthuko yezomnotho kuso sonke isifundazwe futhi kusize entuthukweni ngaphandle kwendawo eyinkaba.

Phakathi kuka-2022 no-2047, ukwanda kwemizi eSifundazweni saseGauteng kulindeleke ukuba kwehlukahluke kuye ngokubikezelwa kwesidingo sokusetshenziswa komhlaba. Ngaphansi kwesimo esingenzeka, ukwanda kwemizi engu-4,044,739, isuka kwengu-5,318,675 ngo-2022 iya kwengu-9,363,415 kuyabikezelwa kungakedluli u-2047, kuyilapho ukubikezela okufiselekayo kubikezela ukwanda okuncane kwemizi engu-3,021,507, ifinyelela kwengu-8,340,182 kungakedluli u-2047.

Ngesikhathi esifanayo, isidingo esandayo esengeziwe sokusetshenziselwa umhlaba kwezohwebo eSifundazweni saseGauteng kulindeleke ukuba kukhulu ngokuphawulekayo. Phansi kokubikezela kwesimo esifiselekayo, isidingo sizokhula sisuka kumahektha angu-212.8 hectares ngo-2022 kuya kumahektha angu-5,937 kungakedluli u-2047, kuyilapho isimo esifiseleka ukuba senzeke sikhomba ukwanda okukhulu, okufinyelela amahektha angu-8,649.6 enkathini efanayo.

Isidingo sokuthuthukiswa kwezindawo zokuhlala eziyimizi eGauteng kuholwa ngamanani wabantu nokwanda kwemizi. Lokhu kwanda kusabalala kugcwele isifundazwe sonkana ezindaweni ezibhekwa njengezifanelekela ukwakha izindlu, njengezindawo zokuhlala ezintsha, izindawo okungase kwandiselwe kuzo zesikhathi esizayo, izindlu zoxhaso lukahulumeni, kanye nasekwandiseni, ngenani elingase libe khona lemizi engase yakhiwe kulezi zindawo. Ubungako bomhlaba odingekile ukuze kulangatshezwane nesidingo sesikhathi esizayo sezindawo zokuhlala eGauteng kungakedluli u-2047 kuyahluka phakathi kokubikezela okungenzeka nokufiseleka ukuba kwenzeka. Ngaphansi kokubikezela kwesimo esifiseleka ukuba senzeke, amahektha omhlaba angu-178,896 azodingeka ukuze amumathe imizi eyengeziwe yokuhlala engu- 4.0 miliyoni. Ekubikezelweni kwesimo esifiseleka ukuba senzeke, amahektha womhlaba angu-102,075 azodingeka ukuze amumathe imizi eyengeziwe engu-3.0 miliyoni.

Uhlelo lugxile ekuthuthukisweni kokwakhiwa kwezindawo ezindaweni ezikhona ezisesilungwini naseduzane kwemizila esemqoka yezokuthutha ukuze kwehliswe inani labantu abafudukela ezindaweni zasedolobheni, kudanjiswe umthwalo othwelwe yingqalasizinda, futhi kwakhiwe imiphakathi yezindawo ezanelisa izidingo ezihlukahlukene zabantu. Ngokukhuthaza izindawo zokuhlalwa ngabangingi ezindaweni ezithintekayo, i-ITMP25 ihlose ukwenza ngcono ukuhlinzekwa kwezinsizakalo (services) futhi kukhuthaze ukudlondlobala okusimeme kwezindawo zasedolobheni. Izindawo zokuhlala ezakhiwe zaba seduze neziteshi zezinto zokuthutha (Transit-Oriented Development [TOD]) ziwudaba olusemqoka lokwakha izindawo ezingamumatha abantu abangingi, ezifeza izidingo ezihlukahlukene zabantu eduzane nezindawo zezokuthutha ezinendima enamandla kwezomnotho nezokuthutha. Le ndlela ukhuthaza ukusetshenziswa kwezinto zokuthutha zomphakathi, yehlise isidingo sokuthembela ezimotweni okungeyomuntu ngamunye, futhi kuphaphamise intuthuko yezomnotho, kanjalo kwengce impilo yabantu basedolobheni ibe ngcono futhi idambise imiphumela engemihle endaweni yezemvelo.

Ukuze kuqinisekise impumelelo ekuphumeleliseni i-ITMP25, uhlelo luhlinzeka ngohlelo oluningiliziwe lokusebenza olubandakanye izinyathelo zenkathi emfushane, emaphakathi kanye nende. Into eza kuqala ebalulekile wukuletha ukunakekela kungqalasizinda yezobunjiniyela, njengoba kubalulekile ekuqaliseni izinqubomgomo zesu lokufezekiswa komsebenzi ezindaweni zedolobha ezikhuthaza ukusetshenziswa komhlaba okudidiyelwe, ukuhlelwa kwezokuthutha, ukwandiswa kwezindawo zokuhlala nezakhiwo, nokubhekana nenselele yokungalingani kwabanti ezindaweni zasedolobheni. Enkathini emaphakathi, kuzogxilwa ekuthuthukiseni izindawo ezintsha zezentengiselwano kanye nemizila yokuthutha, kuyilapho kuqhutshekwa nokuletha ukunakekela kungqalasizinda ebaluleke kakhulu ukuze kuphumeleliswe ukwanda okungaxhamazeli. Enkathini ende, uhlelo luhlose ukusungula izindawo zasemadolobheni ezinezinsiza zonke ezihlobana kahle nengqalasizinda iyonke ywzokuthutha nezivumelana nemigomo yezindawo ezisimeme. Lokhu kufanele kwesekwe wuhlaka lokusebenza oluthi Gwema-Shintshela Kokunye-Thuthukisa (Avoid-Shift-Improve [ASI]), ucwaningo lwezindleko nezinzuzo kutshalo-mali lwengqalasizinda, kanye nesu lokufezekiswa komsebenzi wokwandiswa kwezakhiwo esifundeni eduzane nemizila yezokuthutha.

Ubuphathi obusebenza kahle nokwesekwa okuqinile kwezinhlangano kuhamba phambili uma kuzophumelelwa isu-mgomo le- ITMP25's. Lokhu kubandakanya ukusungule iNkundla Yemikhakha Eminingi YeSifundazwe (Provincial Multi-Sectoral Forum) ukuze kuqondiswe ukuhlela kuyo yonke imikhakha ehluahlukene nezigaba zikahulumeni, kuthuthukiswe iminyango yokuhlelwa komasipala, nokuqinisekisa ukuthi izinqubomgomo ziyavumelana ukuze ziseke intuthuko eya phambili.

Ekuphetheni, i-ITMP25 inikeza umkhombandlela yesu lokufezekiswa komsebenzi ukuze kuphuculwe iGauteng ibe yisigodi esiphapheme, esingakhetshi iphela emasini, nesiyinsimbi engagobeki. Ngokubhekana nezinseselele ezifana nokusabalala okungahlelekile kwedolobha liye endaweni ezungezile, ubuthakathaka bengqalasizinda kanye nokungalingani kwezenhlano nezomnotho ngokusebenziswa komhlaba kanye nokuhlelwa kwezokuthutha – isu-mgomo luhlose ukweseka inthuthuko esimeme nokwenza impilo ibe ngcono kuzo zonke

izakhamizi. Ukufeza lesu-mgomo kuzodinga ubuphathi obuhlabahlosile, ukuvunyelaniswa kwezinqubomgomo okusebenza kahle kanye nokubamba iqhaza ngenkuthalo kwababambiqhaza ukuze kwakhiwe ikusasa eliphapheme nelisimeme lesifundazwe.

## 5. Ukubikezelwa Kwezidingo Zezokuthutha

Ingxenye ebucayi yokubuyekezwa kwe-ITMP25 kwakuwukusebenzisa nokuthuthukisa ukuBikezela Kwezokuthutha zaseGauteng (Transport Model [GTM]). Leli thuluzi lokubikezela ladlala indima ebalulekile ekubikezeleni, ekuhloleni nasekuhloleni izimo ezihlukahlukene kwezohamba ukuze kuqinisekiswa ukuthi isifundazwe asisaleli emuva emigomweni yaso yenkathi ende kwezokuhamba, kwezendawo yezemvelo, kwezezimali nakwezomnotho.

I-GTM iyithuluzi lokubikezela elisuselwa esidingweni seminingwane yokuhamba elasungulwa ku-PTV VISUM. Leli thuluzi ligxile enkathini ematasa kakhulu yasekuseni phakathu kuka-06:00 no-09:00. Kukhona izigodi ezingu-2500-3000 ethuluzini lokubikezela okubandakanya izinto zokuhamba okungezona izimoto, izimoto okungezabantu umuntu ngamunye, izindlela zokuthuthwa omphakathi ngezinto ezihamba phansi kanye nokuthuthwa komphakathi ngezitimela. Nakuba ukuthuthwa kwezimpahla kucatshangelwa emizileni yomgwaqo, asikho isidingo sokuthuthwa kwezimpahla esibikezelwayo.

Leli thuluzi lokubikezela lihlanganisa izigaba ezintathu ezisebenzayo: ukubikezelwa kwenani lohambo oluhlukahlukene, ukubikezelwa kwalapho lolu hambo oluhlukahlukene oluya khona, nezinto zokuhamba ezisetshenziswayo ukuya lapho. Lezi zigaba zihlangene, lapho ukubikezelwa kwalapho uhambo oluhlukahlukene oluya khona kanye nezinto zokuhamba ezisetshenziswayo ukuya lapho kwenziwa ngesikhathi esifanayo. Ukuhlawumbiselwa kwesidingo sesikhathi esizayo kwasuselwa ngokuyinhloko ekusetshenzisweni komhlaba, ngesidingo esengeziwe esasuselwa ohambweni lasemoyeni/lwezindiza kanye nesu lokufezekiswa komsebenzi kwezokuthuthwa kwezimpahla ngokwezimo zesikhathi esizayo. ENingizimu Afrika, ukuthengeka kwezimoto kusiza ekukwazini ukuhlukanisa abantu ngezigaba, ngoba labo abahamba ngezinto zomphakathi behamba ngendlela ehlukele. Ucwangingo lokubikezelwa lapho uhambo oluhlukahlukene oluya khona phakathi nesifunda saseGauteng kwabandakanya ukuhlaziywa kweminingwane yohambo, kwagxilwa ekuhambahambeni kwezimoto njengoba kwaqoshwa kusetshenziswa iminingwane ye-INRIX yezimoto ezigeleza emigwaqweni.

Ithuluzi le-Modified Exponential Decay Model lasetshenziswa ukummelela ukubikezelwa kwenani lohambo oluhlukahlukene phakathi nethuluzi. Izinto zokuhamba ezisetshenziswayo ukuya endaweni okuyiwa kuyo lakhiwa ngezigaba ezimbili. Ithuluzi eliyinhloko lezinto zokuhamba ezisetshenziswayo ukuya endaweni okuyiwa kuyo licaza izinhlobonhlobo zohambo phakathi kwezinto zokuhamba eziyizimoto nezingezona izimoto kuye ngokuyinhloko ngebanga kulaba bantu abahamba ngalezi zinhlobo ezimbili. Ithuluzi lesibili lezinto zokuhamba ezisetshenziswayo ukuya endaweni okuyiwa kuyo lucaza uhambo phakathi kwezinto zokuthuthwa komphakathi nezimoto okungeyomuntu ngamunye. Ngokohambo lwezimoto zomuntu ngamunye ngamunye, indlela ye-SBA Macro yasetshenziswa enqubweni

yokwabiwa kohambo. Ngokwezinto zokuhamba zomphakathi, uhambo olunhlobonhlobo lwabiwa kusetshenziswa indlela yokwaba esebenzisa izikhawu zesikhathi. Ngokohambo lwezinto zokuhamba okungezona izimoto, (Non-motorised transport [NMT]), kwasetshenziswa indlela ekufikisa lapho uya khona masinyane. Ngenxa yokuba yinkimbinkimbi kwethululi lokubikezela, uhlaka lokusebenza oluphapheme lokuhlolwa kwekwalithi lwadingeka ukuze kuhlolwe izinqubo zokuHLola Nokuhlolwa Kokunemba. Inkambo engcono kakhulu ngenqubo ngayinye yasetshenziswa, nokwaphothulwa wukuhlola okusekelwe emlandweni wesipiliyoni.

Nakuba izimo ezihlukahlukene okuhlanganisa namaprojekthi ahlukahlukene namasu okufezekisa umsebenzi kwabikezelwa, amaprojekthi ayinhloko wesikhathi esizayo ngokwezimo eziyinhloko ezibikiwe kubandakanye:

- Ukuthuthukiswa kwengqalasizinda yezasemgwaqeni (kuhlanganise iMizila Esemqoka (K-Routes): iSigaba 1, 2 no-3 semizila okuhlelwe ohlelweni lamanje lwe-ITMP25.
- Izinsizakalo ezengeziwe zezokuthuthwa komphakathi kwezinto ezihamba emigwaqeni: Ingqalasizinda Ephelele Yesu-Mgomo Lokuthuthwa Komphakathi.
- Izinsizakalo ezengeziwe zezitimela ezithutha abagibeli: Ukusungulwa kabusha kwezitimela ze-metro kwangaphambi kobhubhane lwe-covid; Imizila ka-Extension 3 (Midway ukuya eKrugersdorp; eDaveyton ukuya e-Etswatwa; eMabopane ukuya eHammanskraal); iSigaba 1 se-GRRIN Phase 1-3 neSigaba 4-5.
- Izigodi ezikhipha amagesi wamazanga aphansi (LEZs): intela ka-R100 eNkabeni Yedolobha laseGoli (Johannesburg Central Business District [CBD]), eNkabeni Yedolobha laseSandton, naseNkabeni Yedolobha laseTshwane ngokwezimoto for private vehicles only.

Bekunzimo ezimbili eziphakanyisiwe zokusetshenziswa komhlaba nezomnotho nengokulandelayo:

- Okwenzekayo manje + iminyaka engu-25 yezimo ezingenzeka, kanye
- Okwenzekayo manje + iminyaka engu-25 nokufiseleka ukuba kwenzeka.

Lokho okungenzeka nokufiseleka ukuba kwenzeka kumelela izinkomba ezimbili eziqaphelekayo zentuthuko yesikhathi esizayo yesifundazwe saseGauteng, okusuka enkathini ka-2023 kuya ku-2048. Lezi zimo zisemqoka ekubhekeni indlela ezizoshintsha ngayo izimo zezomnotho kanye nokukhula kwabantu okungaba nomthelela ezakhiweni zokuthutha kanye nesidingo sokuthutha esikhathini eside.

Ukuqhathanisa phakathi kwezimiso eziyinqaba nezisebenzayo kugqamisa ibhalansi phakathi kokukhula komnotho kanye nokuziphendukela kwezakhi zofuzo zabantu, okuhlinzeka ngokuqondisa ekuthathweni kwezinqumo ezibalulekile kumatshalizicelo okuthutha okuzayo. Imininingwane mininga ingatholakala ekubikezeleni futhi yatholakala njengokudingekile ukuze kuhlinzekwe ngokuthuthwa kwesinqumo esisekekwe ebufakazini se-ITMP25. Izithombe ezilandelayo zinikeza isifinyezo seminye yemiphumela yemininingwane eningilizwe.

## 6. Uhlelo Lwezokuthutha Olusimeme

Ingingizimu Afrika ingevumelana neMigomo Esimeme Yezentuthuko (Sustainable Development Goals<sup>1</sup> [SDGs]) njengoba kubekwe ku-Ajenda ka-2030 Agenda Yezentuthuko Ezisimeme nehlose ukuqothula ububha obuxakile kwehlise nokungalingani kwabantu kuyilapho ivikela imbulunga yomhlaba. Uhlelo Lwentuthuko KaZwelonke (National Development Plan [NDP]) ibhekwa njengohlelo oluhambisana kakhulu ne-SDGs. Ezokuthutha zinendima eziyidlalayo ekuphumelelisweni kweminingi yemigomo ye-SDGs, ikakhulukazi noMgomo 11 – Amadolobha Adidiyelwe, lapho uhambo lunenkomba yomgomo we-TARGET ka-11.2, nokuhlose ukuthi kungakedluli u-2030, zonke izakhamizi zizobe zikwazi ukusebenzisa izinto zokuhamba eziphephile, ezingambi eqolo, ezifinyeleleka kalula nezisimeme, ngokwandisa kwezinkonzo zokuthuthwa komphakathi. Ngaphezu kwalokho, kudinga ukunakwa okukhethekile ezidingweni zokuhamba zabantu abasendaweni ezinobungozi, okuhlanganisa abesifazane, izingane, abantu abanezinselele zokuhamba, kanye nabantu abadala, ukuze kuhlangebezane ne-SDG 3.

I-South Africa iphinde ibe yingxenye yesiVumelwano saseParis, ehlose ukunciphisa izinga lokushisa lomhlaba ukuze lingadluli ngo-1.5°C kusukela ezingeni lezinga leminyaka edlule, okudingekayo ukuze ukunciphisa ukukhishwa kwe-CO<sub>2</sub> ngo-45% ngo-2030, futhi kuze kufike ku-Net Zero ngo-2050. Njengengxenye yaleli zobuholi, i-South Africa ibuyekeze i-Nationally Determined Contribution (NDC) yayo ngo-2021, ikhuphula izilinganiso zokwehlisa ukukhishwa kwe-CO<sub>2</sub> kube ngu-510Mt futhi no-420Mt, kanye nokunciphisa izilinganiso eziphansi kube ngu-398Mt no-350Mt ngo-2025 no-2030 ngokulandelana. Njengoba uhambo lugcina umthelela omkhulu ekukhishweni kwe-GHG e-Gauteng, kuhamba phambili ngo-41.4% ngo-2022, kubalulekile ukuthi zonke izinhlelo zokuhamba zihlale ziqhakambisa imizamo yokunciphisa imiphumela yokukhishwa kwe-GHG.

Uhambo luhlobene kakhulu nemiphumela yemvelo futhi luhlala luthuthukisa izindlela ezingekho esimeme uma kuhlelwa futhi kusebenza ngezindlela ezithuthukisa noma ezixhasa ukuhamba, kungase kube ukuthuthukisa ukufinyelela. Nakuba sekubonakalisiwe ukuthi indlela yokusebenza ejwayelekile ayisekho esingcono njengoba kuchazwe ku-ITMP25 yangaphambilini (2013), indlela yokuhlela nokulethwa kwezokuthutha ayikashintshi kakhulu, futhi kudinga ukuba kubekwe nezinye izinguquko ezidingekayo.

Izinkinga eziphawulekayo ukuhlelwa okusimeme kwezokuthutha okunendima enkulu ukuyidlala ekubhekaneni nazo kuhlanganisa:

- Ukwanda kwezindawo zedolobha ezingenelela ezindaweni zenkangala kanye namabanga amade ahanjwayo kunomthelela ophawulekayo okudla imali nesikhathi esiningi futhi okumba eqolo;
- Ukudidiyelwa kwezokuthutha okukhawulelwe nokusetshenziswa komhlaba kanye nokuhlelwa kwezasemadolobheni; izinqubo;
- Ukuhamba ngezinyawo, kuyilapho indlela yokuhamba eyinhloko, kanjalo nokuhamba ngebhayisikili kanye nezokuthutha zomphakathi kufanele kuqalwe ngazo ngako konke ukuhlelwa kwezokuthutha. Nokho, lokhu akuyona into eyenzekayo ngokoqobo; kanye

<sup>1</sup> <https://sdgs.un.org/goals>

- NeNgqalasizinda yezokuthutha namasistimu awakhelwanga izindlela zokudambisa ukuShintsha Kwamazinga Okushisa Embulungeni Yonke futhi ayengakhandelwanga ngaleyo ndlela nangaphambilini ukuze kubhekanwe nemithetha futhi izindlela zamanje zingase zivimbele izinguquko ezidingekayo ukuba zibe khona.

Ezokuthutha Ezisimeme kusiza ngokubangela ukufinyelela okuqalwa ngako kanye nezidingo zentuthuko zomuntu ngamunye, izinkampani nophakathi ukuba kuhkangatshezwane nazo ngokuphephile evumelana nezesimo sempilo yabantu kanye nendawo, kuthuthukise ukulingana ngaphakathi futhi phakathi nezizukulwane, akumbi eqolo futhi kusebenza kahle futhi akunayo imithelela emibi. Khona-ke kudlala indima ebalulekile ekubhekaneni nezinsalelo nokushintsha kwamazinga okushisa embulunga yomhlaba nokuthuthukisa ubulungiswa bezenhlalakahle. Kuphinde kube yigalelo elinomthelela ezinhlakeni ezihlukahlukene ezeseke zonke izici nokuhlelwa kwezokuthutha kanye nokuhlinzekwa nokusekwa kwentuthuko esimeme yezasemadolobheni.

Nakuba kunamadokhumenti ezomthetho, izinqubomgomo, kanye nezamasu okufezekiswa komsebenzi emazangeni omhlaba jikelele, ezweni, nasesifundazweni eziqaphela futhi ezidinga ezokuthutha ezisimeme, akukho okutheni osekufeziwe kuze kube manje.

Ezokuthutha ezisimeme zidinga ukusingathwa ngendlela esekelwe ohlelweni olusebenzisa ukugwenywa kwesidingo sokuhambahamba (ukwehlisa isidingo sokuhambahamba noma sokuthuthwa kwezimpahla futhi luhlanganisa ukudambisa ukusatshalaliswa kwezindawo zedolobha ziye ezindaweni zenkangala ngaphandle kokuhlela okuhle), (ukushintsha indlela yokuhamba noma yokuthutha) mnokuthuthukisa (ukusebenzisa izintuthuko zethoknoloji ukuze kwehlinswe ukusetshenziswa kwamandla namagesi aphuma aye emkhathini) lapho ukuhamba ngezinyawo, ukuhamba ngebhayisikili kanye nezokuthutha zomphakathi kubekwa phambili kunoma yikuphi ukusetshenziswa komhlaba futhi ukuhlelwa kwezokuthutha kubhekwa njengendlela enesidingo sokusetshenziswa.

Izindlela zamanje zokuhlela ngokuyinhloko zigxile ezicini zohlelo zoMnotho Olugqugquzela Intuthuko Esimeme Kuyilapho Kudanjiswa Imithelela Emibi Endaweni Yezemvelo zezokuThutha Okusimeme okuhlose ukudambisa amagesi asemkhathini abamba ukushisa (Greenhouse Gases [GHG]) kusetshenziswa imithombo ehlukelele yamandla kanye nokuthuthukiswa kwezethoknoloji okunokugxila okulinganiselwe ekwehliseni isidingo sokuhamba nokukhuthaza ukushintshela kwenye into yokuhamba.

Khona-ke, ukuzibophezela nomzamo ophawulekayo kudingekile ukuze kuqinisekise:

- Ukudidiyela okunegalelo kakhudlwana phakathi nokusetshenziswa komhlaba nezokuhlelwa kwezokuthutha ukuze kubhekanwe nokusatshalaliswa kwezindawo zedolobha ziye ezindaweni zenkangala ngaphandle kokuhlela okuhle;
- Ukuba zonke amasistimu ezokuthutha aklanyelwe/adizayinwe ukuba acabangele izingozi zokushintsha kwamazinga okushisa embulunga yomhlaba futhi kube nezimiso ezisimeme zezokuthutha okubandakanya ukukwazi kwamasistimu ezokuthutha ukuhambelana nokumelana nemithelela yokushintsha kwamazinga okushisa omhlaba; futhi
- Wonke amaphrojekthi kudingeka abe nokuhlaziywa kwazo zonke izindleko kusuka ekuqalisweni komsebenzi kuze kufike ukuphela kwawo okuhlanganisa izindleko ezithinta ezenhlalo nendawo yezemvelo.

Amaphuzu asemqoka okumelwe kuqalwe kuwo ukuze ngokushesha kuqhelwe emqondweni ongasimeme othi "Umsebenzi Uqhubeka Njengenjwayelo" "ukuhlelela ikusasa ngaphandle

kokucabangela ezinye izindlela ezingcono" ukuze kufinyelelwe emqondweni othi "ukubeka umbono bese kuhlolwa ukukwazi kwawo ukusebenza kusetshenziswa uhlaziyo" ekuhlelweni kwezokuthutha kubandakanya ukuqala kokusetshenziswa okusheshayo kwenjongo yokudambisa kakhulu amagesi asemkhathini abamba ukushisa, kudanjiswe ukusetshenziswa kwamandla nokwakhiwa kwamadolobha okuphileka kangcono kuwo (Vumela-Gwema-Shintshela Kokunye-Thuthukisa (Enable-Avoid-Shift-Improve [EASI]), uHlelo Lwezokuthutha Lwezinhlobo Ezintathu (Triple Access), kanye namaDolobha Akhelwe Ukuthi Ufinyelele Izinsizakalo Ezisemqoka Ngaphandle Kokuhamba Amabanga Amade (15 Minute Cities), futhi ezisebenzisana kangcono zona ngokwazo futhi nezinezuzo ukuke kwenye ukuya kwenye.

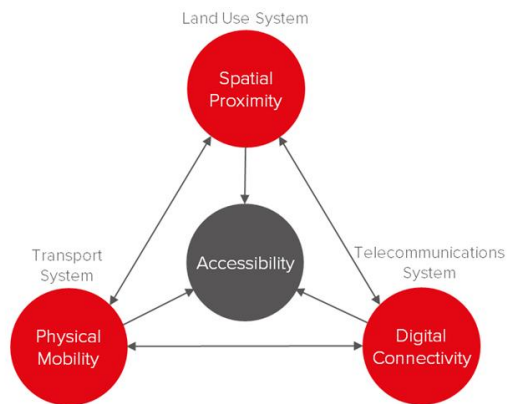
Izingxenye ezine ezakha "EASI" yilezi:

- **Vumela** – ukuqalisa uhlelo olunengqondo, olusebenza kahle, noluphethwe ngendlela efanele oluxhaswe lanela ngemithombo yosizo, lwezinqumo eziphusile futhi oluxhaswe ngokwanele ngezimali. Uhlelo luyakwazi nokulindela izidingo ngaphambi lwesikhathi, luqondise izinyathelo, nokuqinisekisa ukusingathwa okudidiyelwe, ezentuthuko ezokuqhutshwa lwemisebenzi nokunakekelwa kohlelo lezokuthutha.
- **Gwema** – ukudanjiswa / ukususwa kwesidingo sokuhamba kuye ngokuguquguquka kokufinyelela nokushintsha kwemisebenzi, okunomthelela emabangeni ahanjwa ngabantu;
- **Shintshela Kokunye** – Ukusebenzisa izindlela zokuhamba ezine-carbon ephansi— okungukuthi, ukunciphisa ukuthembela emotweni okungeyakho nezindiza ngokusebenzisa ukuhamba ngezinyawo, ukuhamba ngebhayisikili, izinto zokuhamba zomphakathi, kanye nezindlela zokuhamba nabanye; futhi ekuthuthweni kwezimpahla, ukunciphisa ukuthembela ezimotweni nasezindizeni ngokusebenzisa ukuthutha kwezimpahla emanzini, ukuthutha kwezimoto nezitimela ezisebenza ngogesi, kanye namabhayisikili okuthuthwa kwezimpahla ebangeni lokulandwa kwezimpahla kubaqhiqizi/ebangeni lokudilivwa kwezimpahla lapho ziya khona. Izinhlelo zokuthutha ezincishisa ukuthembela emotweni nemizamo yokunciphisa isidingo sokuhamba kubhekwa njengemibandela ebalulekile lapha; kanye
- **NokuThuthukisa** – Ukwenza ngcono ukwakhiwa kwezimoto kanye nokongiwa kwamandla kuyilapho kusungulwa imithombo yamandla ehlanzekile ngokuthuthwa kwezimpahla okuhlukahlukene kanye nezimoyo zabagibeli. Ukusetshenziswa kwe-hydrogen engenayo imithelela emibi endaweni yezemvelo njengomthombo wamafutha (fuel) kuyacatshangela ngeziningi izinselele ezibheke ukufakwa kwayo kwezenyengiselwano. Lena yindima egxile ezindleleni zoMnotho Ongenayo Imithelela Emibi Endaweni Yezemvelo.

Phakathi kuka-40% no-60% wokudanjiswa okudingekayo kwamagesi asemkhathini abamba ukushisa kwezokuthutha kungase kufinyelelwe ngokusebenzisa okuthi "Gwema" nokuthi "Shintshela Kokunye" nangokuthi "Thuthukisa" kuphela okunomthelela wokuze kufinyelele ku-50% wokudambisa okudingekile<sup>2</sup>.

<sup>2</sup> IPCC Assessment Review 6 (AR6) WG 3 (WGIII) Climate Change 2022: Mitigation of Climate Change





### UMfanekiso 6-1: Uhlelo Lwezokuthutha Lezinhlobo Ezintathu (kuthathelwe ku-Lyons et al., 2021<sup>3</sup>)

Ngokweseka i-“EASI” wuHlelo Lwezokuthutha Lezinhlobo Ezintathu (**UMfanekiso 6-1**) ophawula ukuthi ukufinyelela amathuba asimeme, aphephile, anngambi eqolo kudinga ukufinyelela kwezinhlobo ezintathu:

- Ukuba seduze kwezindawo okuhlangene nobuningi obuphezuku bezindawo zokuhlala ezinamathuba afinyelelekayo ngokuhamba ngezinyawo nangebhayisikili (umqondo wedolobha lezinsizakalo eziseduzane (15 minute city);
- Ukuxhumeka Kwezedijithali kungukuqala kohlelo lwezedijithali olusebenza kangcono noselulungele ukufinyelelwa; kanye
- Nokuhamba ngezinyawo okubhekwa njengendlela yezokuhamba esimeme ngokususelwa ekuhambeni ngezinyawo nangezinto zokuthuthwa komphakathi nengezindlela eziyinhloko zokuhamba.

Ngokuqalisa ukusebenzisa le ndlela, imigomo esemqoka elandelayo izokwesekwa:

- Ukweseka i-Just Transition ngokusiza odabeni lokungalingani ku-Social and Spatial inequity;
- Ukweseka iMigomo Yentuthuko Esimeme kanye noHlelo Lwentuthuko KaZwelonke;
- Ukufinyelela imigomo yokudambisa ye-Nationally Determined Contribution GHG– i-Net Zero kungakedluli u-2050; kanye
- Nokweseka ukuzibophezela kweNingizimu Afrika oHlakeni Lokusebenza Lwezinto Eziphilayo Emhlabeni Jikelele (Global Biodiversity Framework).

Imfuneko (ngokuphuthumayo) yokushintshela ekuqinisekiseni ukuthi ukufinyeleleka okusimeme kuba yisisekelo kuzo zonke izinhlelo zokuhamba kanye nezinhlelo zokusetshenziswa komhlaba okusemadolobheni ukuze kuqinisekise ukuthi izinjongo zokuthuthukiswa okuqhubekayo kanye nezinjongo ze-NDC ziyafezeka kungakedluli u-2030 futhi iNingizimu Afrika ifinyelele izibopho zayo ze-NDC kanye nokuzibophezela kwayo kuzo zonke izinto eziphilayo (Biodiversity) emhlabeni wonke, kudinga ukuthi kuqale kusetshenziswe indlela entsha yokuhlela ezokuthutha ngokuphuthumayo.

<sup>3</sup> Lyons, G et al. Triple Access Planning for Uncertain Futures – A Handbook for Practitioners (Summary version), March. 2024. <https://uwe-repository.worktribe.com/output/11751967/>

## 7. Uhlelo Lokusingathwa Kwezidingo Zezokuthutha

### Isingeniso

Le ngxenye icacisa amathuba abalulekile kanye nezincomo zecebo lokulawula izidingo zokuhamba (Travel Demand Management - TDM), okuyingxenye yoHlelo Lokuhlanganiswa Kwezokuthutha lwaseGauteng (ITMP25). Lolu hlelo lwe-TDM luhlose ukukhuthaza izindlela zokuhamba ezisimeme ezihambisana nombono we-ITMP25. Inani le-TDM lilele ekwamukeleni izidingo zokuhamba ezibalulekile ngokuguqulwa kwemikhuba yokuhamba, kugwenywe isidingo sokwandiswa komthamo wezokuthutha.

Ngenxa yokukhuphuka kwezindleko kanye nezabelomali eziphansi, indlela yendabuko yokwakha imigwaqo emisha ukuze kwehliswe umthwalo wezimoto ayisekho isebenza. I-TDM inikela ngamathuba okunciphisa izidingo zokuhamba ngezimoto zomuntu ngamunye, ukuhamba ngezimoto ngesikhathi esiphezulu sokuhamba, kanye nokuncika ezimotweni ezizimele. Izinjongo zalo sezidlule ngaphesheya kokulawula umthwalo wemigwaqo zaphendukela ekuthuthukiseni izinga lempilo ngokuhlinzeka ngezinketho zokuhamba ezitholakalayo, ezingabizi, nezisimeme. Izinzuzo eziyinhloko zifaka phakathi ukusebenzisa izinhlelo ezikhona ngempumelelo, ukuhamba okuncane kwezimoto, ukunciphisa kokukhishwa kwekhabhoni, ukonga izindleko, kanye nokuphepha okuthuthukisiwe.

Noma kunjalo, ukusetshenziswa kwe-TDM eGauteng kuhamba kancane ngenxa yokushoda kwezinsiza zezimali, ukungahambisani phakathi kwamakhansela omasipala, kanye nokunganakwa kwabantu ngohlelo. Kunamathrendi akhombisa ukwanda kokuncika ezimotweni okungezomuntu ngamunye (private cars) kanye nezamatekisi, kuyilapho izindlela zokuhamba ezisimeme zehla. Ukubhekana nezikhala ezikhona ohlelweni, njengezinhlelo zokuhamba ezihlanganisiwe ezingakhiwe kahle kanye nokungasebenzi kahle kwezinhlelo zokusetshenziswa komhlaba, kubalulekile ekuqhubekiseni izinhlelo ze-TDM.

Amaphrojekthi wezokuthutha wamanje avamise ukunganaki izinyathelo ze-TDM, agxile kakhulu ekwamukeleni izibalo zokuhamba ngaphandle kokufaka izindlela zokulawula izidingo zokuhamba. Izincwadi zokuhlola ukugeleza kwezimoto emigwaqeni zivame ukukhuthaza ukuncika ezimotweni, zingafaki izidingo zokubhekana nezindlela zokulawula izidingo ku-Traffic Impact Assessments (TIAs).

Ukukhuthaza ulwazi emphakathini kanye nezinhlelo zokufundisa mayelana nezindlela zokuhamba ezisimeme akubhekisizwa njengokubalulekile.

### Okuhlosiwe Nendlela Yokwenza

Lokho okuhloswe yi-ITMP25 kuwukwakha uhlelo lwezokuthutha oluhlanganisiwe nolusimeme oluthuthukisa izinga lempilo ngenkathi kuncishiswa umthelela emvelweni. Kunconywa indlela ebanzi eqondiswa uhlaka lwe-Avoid-Shift-Improve (A-S-I).

Ingxenye ethi "Gwema" ihlose ukunciphisa izidingo zokuhamba ngezindlela ezifana nokuxhumana nge-dijithali, ukusebenza ngokukude, kanye nokuhlala eduze kwezinsiza.

Isigaba esithi "Shintshela Kokunye" sigqogquzela ukudlulela ezindleleni zokuhamba ezisimeme njengezokuhamba zomphakathi, ukuhamba ngezinyawo, kanye nokuhamba ngebhayisikili.

Ingxenye ethi "Thuthukisa" igxile ekuthuthukiseni izinhlelo zokuhamba ngokusebenzisa izimoto ezonga amandla kanye nobuchwepheshe obuphambili.

Ingxenywe ethi “Vumela” isekela ukuqinisa izinhlelo zokuphatha, ukuhlinzekwa kwezimali okwanele, kanye nokwakha amakhono eziphathimandla zomphakathi nezombuso wesifundazwe.

Indlela ethi Gwema-Shintshela Kokunye-Thuthukisa ibalulekile ekwakheni uhlelo lwe-TDM oluyimpumelelo.

## Uhlelo Lokufezekiswa Kokuhleliwe

Isu elisebenzayo le-TDM lidinga ukubhekana nokuphathwa kokusetshenziswa komhlaba, ukufinyelela ezokuhamba zomphakathi nasezindleleni zokuhamba ezingenamshini (NMT), izinyathelo zezomnotho nezokulawula, kanye nezinhlalo zokushintsha ulwazi nendlela yokuziphatha.

Isu le-TDM laseGauteng ligqugquzela ukuphathwa kwezidingo zokuhamba ngokubhekana nezinto ezithinta kokubili ukunikezwa nezidingo. Izinyathelo zokuhlinzeka zichazwe emibikweni ehambisanayo yokusetshenziswa komhlaba, ezokuhamba ezisimeme, i-NMT nezokuhamba zomphakathi.

Uhlelo lokusebenza lwe-TDM lugxile ezinhlelweni zokushintsha indlela yokuziphatha ukuze kubhekwe uhlangothi lwezidingo.

Yize omasipala bevame ukuba nomthwalo wokufezekisa okuhleliwe kwezinyathelo ze-TDM, i-TAG ne-GDRT zingadlala indima ebalulekile ekuqaleni nasekuhlanganiseni izinhlelo ze-TDM.

Njengempendulo, lolu hlelo lunezinto eziyisihlanu eziyinhloko:

**1. Ukwakhela i-TDM isimo esivumela kalula ukwenziwa komsebenzi:** Ukuhola kwesifundazwe, ukuhlela ngokuhlanganyela kanye nobambiswano nezithakele kubalulekile ekuqinisekiseni ukuthokoziswa kwe-TDM. Ukuhlanganisa i-TDM ekuphathweni kanye nokukhuthaza ukubambisana phakathi kweminyango nezinga lezobuholi kubalulekile. Ukukhuthaza izimali ezithile, kanye nokuqeqesha nokufundisa, kuzosisiza ukuthi i-TDM ibe yingxenywe yesikhungo. Ukuphakanyiswa kokuhlolwa kwezimiso ze-TDM ngaphambi kokucabanga ngezithuthukiso zekhono kanye nokuhlanganisa izinyathelo ze-TDM ezinhlelweni zokuthutha kungaqinisa ukwethulwa kwe-TDM.

**2. Izinqubomgomo Nemithethonqubo Okuwusizo:** Kudingeka uguquko lwezinqubomgomo ukuze kuhlangatshezwane nezinhlalo zokuthuthukiswa kokuhamba nezokusetshenziswa komhlaba okuhambisana nezinhlalo ze-TDM, kugxilwe ku-Traffic Impact Assessments, iziqondiso zezindawo zokupaka, izinhlelo zokuhamba, kanye nezindawo zokuthuthukiswa ezihambisana nezokuhamba zomphakathi.

**3. Imikhankaso Yolwazi Nokuvuselelwa Kokuziphatha:** Ukugqugquzela ukuqwashisa kuwonkewonke gezinzuzo ze-TDM nokubandakanya imiphakathi yasendaweni kanye nabasebenzisi bezokuthutha kubalulekile ekukhuthazeni ushintsho lomkhuba. Imikhankaso yokuqala kufanele igxile ekuguquleni isikhathi sokuhamba, ukukhetha izindlela, kanye nokugcwala kwezimoto, ngezinyathelo zokushintsha imodi zokuthutha ezizokwethulwa kamuva. Izinhlelo zokufinyelela emphakathini kanye nemikhankaso yokumaketha zomphakathi zingakhuthaza ukwamukelwa kwezindlela zokuhamba ezisimeme. Imibuthano ebandakanya abanye ingase iqhakambise ukuqwashisa kanye nendlela i-TDM ebhekwa ngayo.

**4. Izinyathelo Zezomnotho:** Isu-mgomo lokufezekisa umsebenzi le-TDM eliphumelelayo lihlanganisa izikhuthazo ezinhle (pull), ezifana nokuthuthwa komphakathi okuthuthukisiwe nezintengo eziphansi, kanye nezikhuthazo ezimbi (push), ezifana nezimali zokupaka noma izimali zokuhlala kwezimoto. Izinyathelo zezezimali, ezifana nemali yokupaka ezindaweni zomsebenzi kanye neziNdawo Ezinamagesi Aphansi Aya Ekhathini (Low Emission Zones [LEZ]), zinganciphisa ukucinana kwezimoto emigwaqeni kanye nokukhishwa kwamagesi aya emkhathini ezinkabeni zamadolobha. Imali etholakele ebuyele ezixazululweni zokuthutha ezisimeme izosiza ukuqinisekisa ukuthi izinzuzo zihlala. Uhlelo kufanele luqale ngamaphrojekthi wokuhlola ezindaweni ezibalulekile, ezifana nezinkaba laseGoli nelaseTshwane, ukuze kusize ukusungula imigomo nokwamukelwa wumphakathi.

**5. Ukuqhubeka Nokuqapha Nokuhlola:** Ukuqapha nokuhlola kuzolandela ukusebenza kwecebo le-TDM, kusetshenziswa izinkomba zokusebenza ezibalulekile. Ukusungula iKomidi Lokubhekelela Ukuthuthwa Okusimeme/Ukuhamba kuzovumela ukuhlolwa okuqhubekayo kokuthuthuka kwe-TDM esifundazweni.

### **Uxhazo Lohlelo Olungokwezimali**

Ukuqaliswa kwe-TDM okuphumelelayo kudinga uxhaso lwezezimali olufanele kanye nokwabiwa kwezinsiza, okuhlanganisa imithombo yokuxhasa enikezelwe kanye nokuhlanganiswa kwezingxenye ze-TDM kumaphrojekthi ezithuthi zomphakathi noma ezokwakha izikhungo. Kufanele kuqashwe umxhumanisi we-TDM wesikhathi esigcwele ozokwakha amandla, ahlole futhi ahole ithimba lezigigaba ze-TDM ezivela kumaphiko ahlukene esifundazweni, futhi aqhubele phambili intuthuko ye-TDM ngokuphumeza uhlelo lwe-TDM. Umxhumanisi we-TDM angaphinde asungule iQembu/iForamu ye-TDM laseGauteng ukuze akhuthaze ukubamba iqhaza kanye nobuhlakani phakathi kwezindawo.

Ekuphetheni, ukuqaliswa kwe-TDM eGauteng kudinga indlela ehleliwe eqinisekisa ukuphendula, ekhuthaza ukubambisana phakathi kwamaphalamende, futhi ikhombise inqubomgomo. Ukuphakamisa umxhumanisi we-TDM ozinikele kubalulekile ukuze kutholakale izinsiza futhi kuthuthukiswe izindlela ze-TDM ezisebenzayo. Ekugcineni, i-TDM isekela i-ITMP25 Vision yecebo lokuthutha elizinzile.

## **8. Uhlelo Lwezokuthutha Olungazisebenzisi Izimoto**

Phakathi neGauteng, ukuhamba ngezinyawo kufikwe lapho kuyiwa khona kuhlanganisa u-27.7% wokuhamba ngezinyawo okwenziwa ngezikhathi zosuku ezimatasatasa kakhulu, futhi iningi lalokhu kuhamba kuqala ngokuyhamba ngezinyawo futhi kuphele ngokuhamba ngezinyawo. Ngaphezu kwalokho, isikhathi esimaphakathi sokuhamba ngezinyawo ukufinyelela insizakalo/isevisi yokuqala yezokuthutha zomphakathi iye yakhula isuka emizuzwini engu-9 ngo-2014 kuya emizuzwini engu-14 ngo-2019/20. Ngokwenkathi efanayo, isikhathi esidingekayo ukufinyelela endaweni yokugcina ngokusuka kunsizakalo yezokuthutha yomphakathi nayo iphinde yenyuka isuka emizuzwini engu-8 kuya emizuzwini engu-14. Okwamanje ukuhamba ngebhayisikili kudlala indima encane ekuhambeni kukonke.

Nakuba injongo eshiwo kuzo zonke izinqubomgomo namadokumenti wokuhlala kuwukuqinisekisa ukuthi uHlelo Lwezokuthutha Olungazisebenzisi Izimoto kanye Nokusebenziseka Kalula Kwezinto Zokuhamba Ezifinyelelwa Yiwo Wonke Umuntu Kungakhathaliseki Iminyaka Yokudala Nokukhubazeka (Universal Accessibility) kunikwe ukunaka okuza kuqala, eqinisweni amasistimu we-NMT awasetshenziswa ngokugcwele futhi

uHlelo Lwezokuthutha Olungazisebenzisi Izimoto lusabhekwa njengesenezelo nje futhi lunjalo nje lwezibonelo ezimbalwa zokuhlinzekwa kwezinsizakalo Zokusebenziseka Kalula Kwezinto Zokuhamba Ezifinyelelwa Yiwo Wonke Umuntu Kungakhathaliseki Iminyaka Yokudala Nokukhubazeka njengengxenywe ebalulekile yomsebenzi osuwakhiwe futhi ngokukhethekile nesistimu yezokuthutha.

Izinkinga eziyinhloko ngokuhlinzeka okuphumelelayo Kokusebenziseka Kalula Kwezinto Zokuhamba Ezifinyelelwa Yiwo Wonke Umuntu yezezi:

- Ukuntuleka kokwaziwa okubanzi kwezinkinga njengoba zinjalo abahamba ngezinyawo nabahamba amabhayisikili ababhekene nazo. Ukuhlolwa kwezimo njengoba zinjalo njengamanje akukho ukuze kuqondise inqubomgomo yokusebenziseka kalula kwezinto zokuhamba ezifinyelelwa yiwo wonke umuntu kungakhathaliseki iminyaka yokudala nokukhubazeka noma kuqondise amasu okufezekisa imisebenzi yentuthuko;
- Alukho uxhaso oluzinikele olweseka ingqalasizinda Yokusebenziseka Kalula Kwezinto Zokuhamba Ezifinyelelwa Yiwo Wonke Umuntu Kungakhathaliseki Iminyaka Yokudala Nokukhubazeka njengengxenywe yesimeme ezokuthutha. Isabelo esitusiwe ukuze kuthuthukiswe ingqalasizinda Yokusebenziseka Kalula Kwezinto Zokuhamba Ezifinyelelwa Yiwo Wonke Umuntu Kungakhathaliseki Iminyaka Yokudala Nokukhubazeka kanye namasistimu kungu-20% wokwabiwa kwesabelo-mali somhlaba wezokuthutha. (United Nations Environmental Management Programme)<sup>4</sup>;
- Ayikho idathabheyisi eningiliziwe Yokusebenziseka Kalula Kwezinto Zokuhamba Ezifinyelelwa Yiwo Wonke Umuntu Kungakhathaliseki Iminyaka Yokudala Nokukhubazeka ukuze ihlinzeke ngolwazi lwezinyathelo ezithathwayo ngezinjongo zokuhlelwa kwezokuthutha, njengamabhayisikili nabantu abahamba ngezinyawo emizileni emikhulu yokuhamba, ukuhlaziywa kwemininingwane nolwazi kwezokusebenziseka Kalula Kwezinto Zokuhamba Ezifinyelelwa Yiwo Wonke Umuntu Kungakhathaliseki Iminyaka Yokudala Nokukhubazeka NMT; kanye
- Ukuntuleka kokudidiyelwa Kokusebenziseka Kalula Kwezinto Zokuhamba Ezifinyelelwa Yiwo Wonke Umuntu Kungakhathaliseki Iminyaka Yokudala Nokukhubazeka kanye Nezokuthutha Zomphakathi.

Izinselele ezinkulu Zokusebenziseka Kalula Kwezinto Zokuhamba Ezifinyelelwa Yiwo Wonke Umuntu Kungakhathaliseki Iminyaka Yokudala Nokukhubazeka emazingeni womasipala besifundazwe nabasekhaya yilezi:

- Ukuntuleka kwezinqubomgomo eziningiliziwe zesifundazwe nezedolobha, amasu okufezekisa umsebenzi kanye nezihlelo zokuqalisa, imihlahlandlela yokwakhiwa kwezobunjiniyela kanye nezindinganiso;
- Uxhaso olulinganisilwe lokuhlinzekwa kwengqalasizinda Yokusebenziseka Kalula Kwezinto Zokuhamba Ezifinyelelwa Yiwo Wonke Umuntu Kungakhathaliseki Iminyaka Yokudala Nokukhubazeka kanye nokuntuleka kokxhaso olubekelwe ukuhlinzekwa kwengqalasizinda Yokusebenziseka Kalula Kwezinto Zokuhamba Ezifinyelelwa Yiwo Wonke Umuntu Kungakhathaliseki Iminyaka Yokudala Nokukhubazeka;
- Ingqalasizinda Yokusebenziseka Kalula Kwezinto Zokuhamba Ezifinyelelwa Yiwo Wonke Umuntu Kungakhathaliseki Iminyaka Yokudala Nokukhubazeka ngokuyinhloko ibhekwa njengesenezelo esihamba eduzane nemigwaqo yezimoto. Amagama athi 'ukukwazi

<sup>4</sup> <https://www.unep.org/news-and-stories/press-release/urgent-investment-needed-walking-and-cycling-infrastructure-save>

ukuhamba' ayizimpande zenqubomgomo yezokuthutha yaseNingizimu Afrika kanye nokuhlela okuhotshaniwa nokuhamba ngezimoto, kuyilapho ukukwazi ukuhamba kwabangingi kumane nje kusho ukukwazi ukuhamba ngokuphephile ukuya kumasevisi endawo, ukuya esikoleni, emsebenzini, ukuya endaweni okutholakala kuyo ezokuthutha komphakathi, njll.;

- Ukuthuleka kokudidiyela Kokusebenziseka Kalula Kwezinto Zokuhamba Ezifinyelelwa Yiwo Wonke Umuntu Kungakhathaliseki Iminyaka Yokudala Nokukhubazeka ngokuvumelana nokuhlelwa kokusetshenziswa komhlaba kanye nezokuthuthwa komphakathi;
- Ubudedengu bokunakekela okwakhiwe njengamanje Kokusebenziseka Kalula Kwezinto Zokuhamba Ezifinyelelwa Yiwo Wonke Umuntu Kungakhathaliseki Iminyaka Yokudala Nokukhubazeka;
- Ukuntuleka Kokusetshenziswa Kokusebenziseka Kalula Kwezinto Zokuhamba Ezifinyelelwa Yiwo Wonke Umuntu Kungakhathaliseki Iminyaka Yokudala Nokukhubazeka kanye namadathabheyisi wolwazi neminingwane ye-NMT ngezinjongo zokuhlela nezemisebenzi; kanye
- Inggalasizinda ye-NMT ivame ukwakhiwa ngokuhukene nemigwaqo futhi i-NMT ivame ukubhekwa njengehlukene nemigwaqo kusetshenziswa ukwenezela kokukhona ukuze kuhlinzekwe indawo thizeni ukuze 'kucatshangelwe' abantu abadinga Ukusebenziseka Kalula Kwezinto Zokuhamba Ezifinyelelwa Yiwo Wonke Umuntu Kungakhathaliseki Iminyaka Yokudala Nokukhubazeka.

Kuzo zonke izigaba, uhulumeni kazwelonke kanye nezikhungo zendawo seziye zabhalela izinqubomgomo, imikhombandlela, necebo ezithinta noma eziqondisa indlela ye-NMT (Ukuhamba Okungaphansi Kwezithuthi) kanye ne-Universal Access (UA). Lezi zinhlelo zithuthukisiwe noma zisalindelwe imvume yokugcina, noma zidinga ukubuyekezwa.

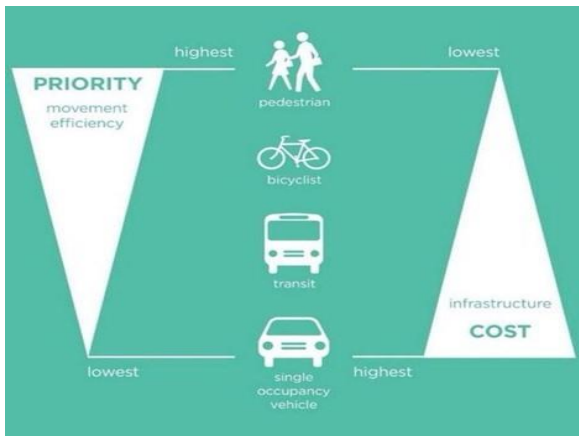
Indima ye-NMT ekusekeleni i-Just Transition nokunciphisa ukukhishwa kwe-Greenhouse Gases (GHG) iyavuma kahle, futhi imigomo ebalulekile isethwe. Le migomo ifaka ukukhuthaza i-NMT njengendlela ehamba phambili yokuthutha; ukunciphisa ukugcwala kwezimoto nokukhishwa kwegesi ngokwandisa ukwamukelwa kwe-NMT, kanye nokuhlinzeka, ukuhlela, nokuthuthukisa izakhiwo ze-NMT. Ezingeni lamadolobha, amaphepha okuhlela, izinhlelo nezinqubomgomo zifaka izinhlinzeko zokuthuthukiswa kwezakhiwo ze-NMT. Uhlelo oluyinhloko lwe-Gauteng luhlolwe ohlakeni lokugcina lweNhlolombono Eyinhloko Yezokuthutha Kwezinto Okungezona Izimoto (Non-Motorised Transport Master Plan) (Meyi 2016) ehlinzeka indlela ecacile yokuthuthukisa ezokuthutha kwezinyo okungezona izimoto.

Noma kunezinqubomgomo, imikhombandlela, amaphepha okuhlela nezinhlelo eziningi, i-NMT (noma, ngokuhamba kwesikhathi, i-Active Mobility) iyaqhubeka nokuhluleka ukubhekiswa ngendlela efanele ngenxa yokugxila kumaphrojekthi okuhamba ngezithuthi ezihlobene nemoto. Futhi, i-Universal Access (UA) idinga ukunakwa okukhethekile ukuze kuqinisekiswa ukufakwa kwayo ezinhlelweni zokuhlela nokusebenza, ngokuba nezinhlelo zokuthutha okuphumelele. Ukuphazamiseka kwezokuthutha kudinga ukufinyelela ezindaweni eziphumelelayo ngenxa yokuhlukaniswa kwesikhala okubela ezinhlelweni zokuphathwa komhlaba, lapho izindawo zokuhlala zivame ukuba indawo ephezulu yokuhlala ngaphandle kwezimboni nezinye izikhungo zedolobha.

Nakuba izinqubomgomo necebo zibhale ukuthi i-NMT ne-UA kufanele zithole ukunakwa okufanele, empeleni ukusebenza kwazo kusephansi kakhulu. I-NMT ivame ukubhekwa njengomphumela ongaphansi kwezakhiwo zokuthuthukiswa.

Ukuthuthukiswa kwe-NMT kubaluleke kakhulu ekukhuthazeni izokuthutha ezihambisana nokuphila okuvulekile, okuphephile, okuvumela ukufakwa kwezakhiwo ezahlukene. Umgomo wokuthuthukisa i-“universal design,” uthi ukubhekisa ukuthi abantu kufanele bafinyelele ezindaweni ezihlukahlukene zomphakathi nokuthutha, kunokuba kuvunyelwe abantu ukuba basebenze kuphela emhlabeni ophethwe izimoto.

Njengezici eziyinhloko zanoma yiluphi uhlelo lwezokuthutha olusimeme nolunobulungisa, ukuhamba ngezinyawo namabhayisikili kufanele kubhekwe njengezindawo okuqalwa kuzo ngako konke ukuhlelwa kwezokuthutha kanye nokuhlelwa kwezindawo zasemadolobheni njengoba kuchazwe **Umfanekiso 8-1**.



**Umfanekiso 8-1: Ukusebenziseka Kalula Kwezinto Zokuhamba Ezifinyelelwa Yiwo Wonke Umuntu Kungakhathaliseki Iminyaka Yokudala Nokukhubazeka Okubekwe Eqhulwini Wkuhlelweni Kwezokuthutha**

Le ndlela yeseka kokubili okuthi Vumela, Gwema, Shintshela Kokunye nokuthi Thuthukisa kanye nokuhlela Lwezokuthutha Lezinhlobo Ezintathu nokuyizindlela ezibalulekile ekusungulweni kwezinhlelo zokuThutha Ezisimeme futhi zisemqoka ekuthuthukisweni kwezinyathelo ze-TDM.

Kudingeka ukuba kube noshintsho olukhulu endleleni yokuklanywa nokwakhiwa kwemigwaqo ngokwamukela indlela (“yokubekwa phambili kwezinhlobo zokuhamba kuye ngemigomno yezinqubomgomo, ukuhlelwa kwendawo nangezidingo zabantu”) ohlelweni lokuthuthukiswa kwengqalasisinda yemigwaqo. Le ndlela ihlose ukuthuthukisa ingqalasisinda yemigwaqo ukuze ihlangabezane nezidingo zabo bonke abasebenzisi bemigwaqo. Leli cebo lichaza ngokusetshenziswa kwemigwaqo kuye ngohlelo lokubeka ngesidingo, lapho ukubaluleka kuqala kwabahamba ngezinyawo njengabacatshangelwa kuqala, kuye kwabahamba ngamabhayisikili, abahamba ngezinto zomphakathi bese kuthi izimoto okungezomuntu ngamunye zicatshangelwa ekugcineni. Lokhu kulangana kahle nomqondo “yokubekwa phambili kwezinhlobo zokuhamba kuye ngemigomno yezinqubomgomo, ukuhlelwa kwendawo nangezidingo zabantu” okunikeza incazelo entsha yalokho isitaladi esihloselwe kona. obeka kabusha injongo yemigwaqo. Le ndlela iwuhloza ukuhluhanisa kwakudala

phakathi kwemigwaqo emikhulu (“imigwaqo engothela-wayeka”), ezokuthutha zomphakathi, abahamba ngamabhayisikili nabahamba ngezinyawo, kodwa esikhundleni salokho igxile ekufinyeleleni imiphumela efiselekayo kwezokuthutha ezibhekelela ukuphepha nokusetshenziswa okulula kuwo wonke umuntu. Lokhu kudinga ukuthi iziqondiso zokuklama imigwaqo ezifaka iZinto Zokuhamba Okungezona Izimoto (Non-Motorised Transport [NMT]) kanye nezokuthutha zomphakathi zisebenze ngokuqinile.

Njengoba i-NMT isalokhu iyindlela eyinhloko yokuhamba kubantu abaningi futhi iyisisekelo sezokuthutha ezisimeme, ukuhamba ngezinyawo nokugibela amabhayisikili kufanele kube yisisekelo kuzo zonke izinhlelo zokuhlela izokuthutha kanye nezokwakha izindawo zokuhlala nezohwebo.

Ngokusekelwe ezinjongweni zokuthutha ezisimeme zokuthi bonke abantu babe nokufinyelela kalula ezokuthutha zomphakathi, kufanele kuthuthukiswe inqubomgomo nesu le-NMT eGauteng. Le nqubomgomo kufanele isuselwe emqondweni “yokubekwa phambili kwezinhlobo zokuhamba kuye ngemigomno yezinqubomgomo, ukuhlelwa kwendawo nangezidingo zabantu” futhi unikeze iziqondiso kubo bonke omasipala. Lokhu kudinga ukuthi wonke umasipala ngamunye ulungiselele i-NMT noma iSu-mgomo Labahamba Ngezinyawo, Ngamabhayisikili Nangakho Konke Okunye Okungekona Izimoto (Active Mobility Strategy) elihlanganisa noHlelo Lezokuhamba Olulula Ukusetshenziswa YiBo Bonke Kungakhathaliseki Ubudala Nokukhubazeka Komzimba (“Universal Access”) futhi kuhlangukise ukuphepha kanye nokufinyelela kwalabo ababuthakathaka njengento ebalulekile. Kulokhu, ukuhamba ngezinyawo nokugibela amabhayisikili kufanele kube nezinhlelo ezihlukile njengoba kuyizindlela ezibalulekile ngokwazo.

Imizila yamabhayisikili egudla imizila yemigwaqo esemqoka kufanele isungulwe. Lokhu kuzoba yingxenye yokuklanywa kabusha/yokudizayinwa kabusha kwezingxenye ezihlukene ezibalulwe njengengxenye yengqalasisizinda kanye nezici ze-PLTF zezokuthutha ezisimeme.

Izinto Zokuhamba Okungezona Izimoto kufanele ziqhakambiswe njengendlela yokuhamba encanyelwayo neyamukelekayo emkhankasweni obanzi wezokuthutha okusimeme.

Ukuxhaswa kweZinto Zokuhamba Okungezona Izimoto kuzodinga ukuthi lolu daba lube yinto eza kuqala futhi lungase luhlotschaniswe nokuxhaswa kokuShintshashintsha Kwamazinga Okushisa Kwembulunga Yonke Climate Change njengendlela yokwenezela.

Ukuze kufinyelelwe uhlelo olusebenzayo lweZinto Zokuhamba Ezingasebenzisi Izimoto eGauteng kuhlangozwa okulandelayo:

- Ukusungula ingxenye enezinsiza ezanele yezinto Zokuhamba Ezingasebenzisi Izimoto. Le ngxenye ngeyokuqinisekisa ukuthi Kokusebenziseka Kalula Kwezinto Zokuhamba Ezifinyelelwa Yiwo Wonke Umuntu Kungakhathaliseki Iminyaka Yokudala Nokukhubazeka kuyafakwa kuzo zonke izinyathelo zokuhlelwa kwezokuthutha futhi kweseka iziphathimandla zendawo ekusungulweni nasekuhlinzekweni kweZinto Zokuhamba Ezingasebenzisi Izimoto;
- Ukusungula inqubomgomo/isu lokufezekisa umsebenzi lesifundazwe leZinto Zokuhamba Ezingasebenzisi Izimoto ukuqinisekisa ukuthi i-UA ifakiwe nokuthi ukuphepha nokuvikeleka kuyacatshangelwa kuyo yonke indlela yokuqinisekisa ukuphepha kwabahamba ngezinyawo, ngamabhayisikili nabashayeli bezimoto;
- Ukuhlinzeka ngesabelo-mali esihlezi sikhona sokuthuthukiswa kwe-NMT;



- Ukuqinisekisa ukuthi Ukusebenziseka Kalula Kwezinto Zokuhamba Ezifinyelelwa Yiwo Wonke Umuntu Kungakhathaliseki Iminyaka Yokudala Nokukhubazeka kuyafakwa ekusungulweni kwemizila yezinto zokuhamba esifundazweni;
- Ukuphenya imizila yokuhamba ngamabhayisikili (“Imizila Yamabhayisikili”) emigwaqeni esemqoka esifundazweni;
- Ukuqinisekisa ukuqwashisa mayelana neZinto Zokuhamba Ezingasebenzisi Izimoto nokuthi umkhankaso wokuphepha uyafakwa ohlelweni lokuqwashisa lwezokuthutha ezisimeme / le-TDM. Njengengxenywe yalo mkhankaso, kusungulwe iqembu elisebenzayo leZinto Zokuhamba Ezingasebenzisi Izimoto kanye Nokusebenziseka Kalula Kwezinto Zokuhamba Ezifinyelelwa Yiwo Wonke Umuntu Kungakhathaliseki Iminyaka Yokudala Nokukhubazeka olubandakanya abadlali-ndima abasemqoka; kanye
- Nokuphenya nokusungula uhlelo lokusatshaliswa kwamabhayisikili oluhlobene noHlelo Lwezokuthutha Lwesikole (Scholar Transport Programme).

Iningi lezinqubomgomo zangaphambilini, amasu okufezekisa umsebenzi nezinhlelo kuzicacise kahle imfuneko yeZinto Zokuhamba Ezingasebenzisi Izimoto ne-UA njengephuzu lokuqala lokuhlelwa kwezokuthutha kanye nokuhlinzekwa kwazo kodwa kubonakala sengathi kuthola ukunakwa okuncane kakhulu kuze kube manje. Ukuze kwesekwe kokubili ukushintshela endleleni entsha enobulungisa kanye nokuthuthukiswa kohlelo lwezokuthutha olunobulungisa, uhelo lweZinto Zokuhamba Ezingasebenzisi Izimoto kumelwe kube yisiqalo esiyindinganiso okuvunyelwana ngaso ngakho konke ukuhlelwa kwezokuthutha kanye nokuthuthukiswa (kabusha).

## 9. Uhlaka Lokusebenza Lobuchwepheshe Bezedijithali

Kulo mhlaba wanamuhla oqhubeka uxhumana kakhulu kunakuqala, ezokuthutha sezidlula ngalé kokuhambahamba okulula kwabantu nokuthuthwa kwezimpahla ukusuka endaweni ethile ukuya kwenye. Inhloso-mbono Yeminyaka Engamashumi Amabili Nahlanu Yezokuthutha Okudidiyelwe (Twenty-five Year Integrated Transport Master Plan [ITMP25]) yeSifundazwe saseGauteng iyaqaphela ukuthi amasistimu wesimanjemanje wezokuthutha kumelwe asungule ukuxhumana okulula phakathi kwezindlela ezihlukahlukene zokuhamba, izinsizakalo, nababambiqhaza. Lokhu kwanda ngokuyinhloko kuqhutshwa ukudidiyela kwezethekholoji kanye neminingwane, nokuwumgogodla wamasistimu wesimanjemanje wezokuthutha.

Uhlaka Lokusebenza Lobuchwepheshe Bezedijithali lemboni yeGauteng yezokuthutha luchaza ngendlela ezethkhnoloji esahlumayo njenge-Internet of Things (IoT), i-Artificial Intelligence (AI), neminingwane eyinkimbinkimbi kungase kusetshenziswe ukuze kuthuthukiswe ezokuxhumana, ukuphepha nokusimama. Le nguquko ihamba phambili ngokuguqula kuphela izingxenywe ezithile zibe yidijithali; ihlanganisa ukusethenziswa kobuchwepheshe bedijithali ukuze kuthuthukiswe izingqubo, kuthuthukiswe ukusebenza, futhi kudaleke amathuba amasha ngaphakathi kwesistimu yezokuthutha.

Uhlaka Lokusebenza Lobuchwepheshe Bezedijithali laseGauteng (Gauteng Digitalisation Framework) iboniswe ku-**eMfanekisweni 9-1** futhi inikeza indlela ebanzi ngokuthuthuka kwezedijithali eyakhelwe ezicini ezintathu ezibalulekile: Izingqubo Zokuthutha Zobuchule Bezedijithali (Intelligent Transport Systems) (ezimelele ukwenza ezokuthutha zisebenze ngezindlela zedijithali) iSikhungo Seminingwane (Data Hub) (esimele ukugcinwa kweminingwane nokuba indawo eyodwa yokufinyelela eMininingwaneni Yokuhamba (Mobility Data), kanye Nezingqubo Zedijithali (ezimelele ubuchwepheshe bezedijithali

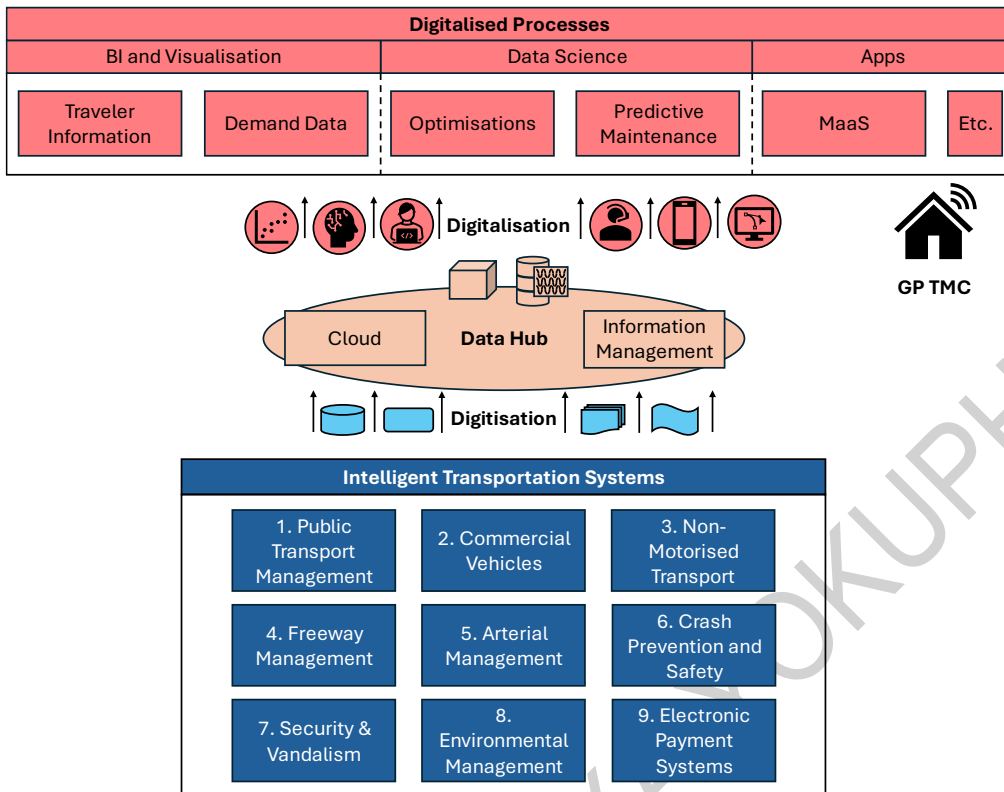
nokusebenza kwezinkundla ze-app). Kumongo wayo, kukhona iSikhungo Semininingwane, inkundla ye-cloud yekhompyutha ephethe konke etholakala ku-Transport Management Centre (TMC), esebenza njengendawo eyodwa yokufinyelela yonke imininingwane ephathelene nokuthutha esifundazweni.

Izinhlelo eziyisishiyagalolunye zeZinhlelo Zokuthutha Zobuchule Bezedijithali zakha isisekelo salolu hlaka lokusebenza, ngayinye ibeka igalelo ekuthuthukisweni kwezinqubo zokuthutha ezidijithali esifundazweni. Lezi zinhlelo zisebenzisa ubuchwepheshe ukuze ziqinisekise ukugeleza kahle kwezimoto emigwaqeni, zithuthukise ukuphepha, kanye nokuthuthukisa ukusebenza kwezokuthutha. Izinhlelo ze-ITS zikhiqiza imininingwane eyinkimbinkimbi ethathwa, icutshungulwe, futhi igcinwe eSikhungweni Semininingwane. Ngaphezu kwemibiko ye-ITS, iSikhungo Semininingwane sifaka neminye imininingwane ebalulekile efana nemininingwane yokusetshenziswa komhlaba, imininingwane yezinsizakalo, izinhlelo zokukhokha, kanye nokuhlolwa kwesimo sengqalasizinda.

Lesi sixazululo sibeka uMnyango Qezemigwaqo Nezokuthutha waseGauteng (Gauteng Department of Roads and Transport [GDRT]) njengomnikazi walesi Sikhungo Semininingwane, ukuqinisekisa ukusingathwa okubumbene kwemininingwane kanye nokudidiyelwa kwezinqubo. Ngokusebenzisa leli khosomba elisingethwe kahle lemininingwane, uhlelo lwesekela izinhlelo ezihlukahlukene, kusukela kumathuluzi ebhizinisi, amadeshibhodi, kuya kumamodeli wezinga eliphezulu wezesayensi yemininingwane, okuvumela ukusingathwa kwaso sona lesi sikhathi (real-time) kanye nokuhlelwa kwenkathi ende yezengqalasizinda, okuhlanganisa ukukwazi ukuqhuba imisebenzi yokulungisa ngaphambi kwesikhathi.

Uhlaka lokusebenza lubeka imininingwane njengesisekelo sezinhlelo zokuthutha zanamuhla ngokusebenzisa izingxenyane ezine ezibalulekile: iMininingwane Efinyelelwa Uwonke Wonke Ngaphandle Kwemikhawulo, Ukuvikelwa Kwemininingwane, Izindinganiso Zemininingwane, noKwabelana Ngemininingwane. Uhlelo lweMininingwane Efinyelelwa Uwonke Wonke Ngaphandle Kwemikhawulo luvumela ukubekwa kwezinto obala futhi zifinyelelwe yibo bonke ngokwenza ukuthi imininingwane yezokuthutha itholakale ngokukhululekile ukuba isetshenziswe wumpahakathi, ochwepheshe bezesofthiwe, kanye nabanye ababambiqhaza, nokuphucula indlela izinto ezenziwa ngayo ezinsizakalweni zezokuthutha nakuma-app.

Ukuvikelwa kwemininingwane kubalulekile kulolu hlelo lokusebenza, njengoba imizamo yokufaka izinyathelo ezingqala zokuvikela idatha ibalulekile njengoba izinhlelo zokuthutha ziba zedijithali. Isakhiwo siqinisekisa ukuthuthukiswa kwezinhlelo eziyimigomo yedatha ukuze kuqinisekise ukuvumelana phakathi kwezinhlelo zokuthutha ezihlukene, kuyilapho kukhuthazwa ukwabelana ngemininingwane kuwo wonke ama-ajensi kahulumeni, abahlinzeki bezinsizakalo zokuhamba, nababambiqhaza abazimele.



**Umfanekiso 9-1: Uhlaka Lokusebenza Lobuchwepheshe Bezedijithali Lohlelo Lwezokuthutha laseGauteng, olukhomba zonke izingxenye ze-ITS okudingeka zenziwe zibe ngedijithali, zigcinwe ku-cloud yekhompuyutha, bese kusungulwa izinqubo zobuchwepheshe bezedijithali**

Isikhungo Sokusingatha Kwezokuthutha (Transport Management Centre [TMC]) sisebenza ngengesici esiyinhloko zokuqhutshwa komsebenzi wale nxanxathela yezedijithali, okwenza imisebenzi eyinhloko emithathu isebenze: ukuqhutshwa kwemisebenzi yesikhungo seminingwane, ukubekwa kolwazi neminingwane kusetshenziswa izithombe-ncazo, kanye nokusingathwa kohlelo lwe-app. Njengengxenye eyodwa yokufinyelela iMininingwane Yezokuhamba kanye nenqolobane eyinhloko yayo yonke iminingwane ehlobene nezokuhamba, ithola ulwazi kumithombo ehlukahlukene njengezinhlelo ze-ITS, ualwzi oluvela kwezokuthutha zomphakathi, kumadivayisi amunca iminingwane ekugelezeni kwezimoto emigwaqeni, kanye nezinhlelo zokuqapha isimo sezulu. I-TMC isebenzisa ukunekwa kolwazi neminingwane kusetshenziswa izithombe-ncazo ukusiza ababambiqhaza balandelele izinkomba ezibalulekile futhi bathathe izinqumo ezihlakaniphile ngokushesha. Ingqalasizinda yayo ye-API inikeza ababambiqhaza bangaphandle anye nononjiniyela besofthiwe ukungena okuphephile eminingwaneni yezokuthutha. Ngokubekwa kolwazi neminingwane kusetshenziswa izithombe-ncazo, iSikhungo Sokusingathwa Kwezokuthutha sisiza ababambiqhaza ukuba baqaphe izinkomba ezibalulekile zokusebenza futhi bathathe izinqumo eziphusile ngokushesha, kuyilapho ingqalasizinda yayo ye-API sinikeza ngokungena okuphephile eminingwaneni yezokuthutha kuyabambiqhaza abavela ngaphandle kanye nonjiniyela besofthiwe. Okuyizigaba ezisemqoka zengxenye eziqatshangelwe ngaphakathi kwe-TMC odabeni loHlaka Lokusebenza Lobuchwepheshe

Bezedijithali kuyingqalasizinda Yemininingwane, Ukubekwa Kolwazi Neminingwane Kusetshenziswa Izithombe-Ncazo & Amathuluzi Asiza Izinkampani Zithathe Izingqomo Eziphusile, Amasistimu Okusebenza, Ezabasebenzi Nobuchwepheshe, kanye Nengqalasizinda Eyakhiwe.

Lolu hlaka lokusebenza luveza amaprojekthi abalulekile ahlelwe ezigabeni ezine eziyinhloko: i-ITS, i-TMC, iMininingwane, Nezokuxhumana. Lokhu kuhlenganisa ukuhlelwa kahle kweDokumenti echaza ngesu-mgomo, imigomo nokusebenza kweprojekthi (Concept of Operations) ye-TMC, ukuklanywa nokusetshenziswa kweSikhungo Semininingwane, Isu-mgomo Leminingwane, nokwenziwa kokugeleza kwezokuhamba kusebenze ngobuchwepheshe bezedijithali, ukusungulwa kokuSingathwa Kwezinga Eliphezulu Kwezokuthuthwa Komphakathi, ukuthuthukiswa kwezinkundla zolwazi lwabahambi, ukuqaliswa kwezinhloko zokusebenza ze-Mobility as a Service (MaaS), kanye nesizindalwazi semininingwane yokuthuthwa kwezimpahla.

Kubalulekile empumelelweni yalezi zinhlelo ukuthuthukiswa kwengqalasizinda eqinile ye-ICT ngokuhlaziywa okujulile kwezidingo, ukuklanywa kwesakhiwo, kanye nohlelo lokuxhumana lweSifunda. Le ngxenye izosiza ekuxhumaneni okujwayelekile neshesha esithembekile kulo lonke uhlelo lwezokuthutha lwaseGauteng, ixhumanise zonke izakhi zezokuxhumana kulo mkhakha wedijithali.

Ukuphumelela kokusetshenziswa kwalolu hlelo kuncike kakhulu ekusebenzisaneni ngokufanele kwabalingani ababalulekile, lapho i-GDRT ihola ekumisweni kwezinhlelo zokuphatha, ukusetha izinqubomgomo, kanye nokuqinisekisa ukuvumelana phakathi kwezikhungo zomasipala nezifundazwe ezahlukene. Loluhlelo lubaluleka kwenguquko ezinhlanganweni nakubantu, ukuphathwa kokushintsha ngendlela ehlelekile, kanye nezinhlelo zokwakha amakhono ngokujulile.

Ekuphetheni, uHlaka Lokusebenza Lobuchwepheshe Bezedithilali le-ITMP25 luveza indlela ebanzi yokuguqula uhlelo lwezokuthutha lwaseGauteng ngokusungula izindlela ezintsha zobuchwepheshe bezedijithali. Ngokusungula iSikhungo Semininingwane esiyinhloko nokudidiyela izakhi ezahlukahlukene ze-ITS, loluhlelo lwakha isisekelo sokuthuthwa kwezinqumo okucobelelwa yimininingwane kanye nokusebenza kwezinhlelo ezinobuchule. Ngokuqaliswa okuncomekayo kwale misebenzi, iGauteng izoba sesimweni esihle sokuhlangabezana nezidingo eziguqukayo zezokuthutha zezakhamizi zayo kuyilapho yamukela ukuthuthuka kobuchwepheshe emkhakheni wezokuthutha.

## 10. Inqalasizinda Yesu-mgomo Kwezokuthuthwa Komphakathi

Emhlabeni jikelele, impumelelo yesifunda sedolobha ngokwengxenye ithola ukuchazwa njengephumelelayo nesebenza kahle ohlelweni lwezokuthuthwa komphakathi. **"Ngikhombise idolobha eliphumelelayo, ngizokukhombisa uhlelo lwezokuthuthwa zomphakathi oluphumelelayo"** (UMmeleli weBhange Lomhlaba ku-UN). Isizathu salokhu singase sibe yindlela uhlelo lwezokuthuthwa zomphakathi olwenza ngayo ngayo ukuhamba kushelele, lunikeze ukufinyelela amathuba kwezomnotho, lukhuthaze ukubandakanywa komphakathi okungakhethi futhi kwehlise umthelela wohlelo lwezokuthuthwa endaweni ezungezile. Njengoba utshalomali olukhulu luyadingeka ekuthuthukiseni uhlelo lwezokuthuthwa zomphakathi, lusebenza njengesikhuthazo sokuthuthukiswa komnotho kanye nokwakhiwa kwemisebenzi esimeme.

Isigaba se-ITMP25 esithinta ezokuthutha zomphakathi sibhekana nezokuthutha ngojantshi nabahamba ngezindlela zomgwaqo ngendlela ehlanganisiwe. Lokhu kwenziwa kusukela ekuhlaziyweni kwendawo yokusebenza, izindlela zokuhamba, izinsiza, ingqalasizinda nezikhungo, kanye nezici ezihlanganayo eziphathelene nokuhamba kwezokuthutha zomphakathi.

Uhlelo lwezokuthuthwa komphakathi eGauteng kuhlakazekile uma kubhekwa ngeso lokuxhaswa ngokwezimali nokusingathwa kwezinhlangano. Alubumbene, alusebenzi ngokubambisana, futhi ezikhathini eziningi izimo aluziniki izakhamizi izinsizakalo ezibiza kahle, ezinokwethenjela, eziphephile neziphumelelayo. Izinsizakalo zokuhamba ngesitimela zihlinzekwa yi-PRASA ngoxhaso lukazwelonke futhi ngaphambi kwe-COVID-19 yalahlekelwe kakhulu ngabasebenzisi ababalekele kwezinye izindlela zokuhamba ngenxa yokucekela phansi kwengqalasizinda kanye nokuhlinzekwa kwezinsizakalo okungagculisi. Ngesikhathi se-COVID-19, i-PRASA yahlaselwa kakhulu lapho ingqalasizinda nezikhungo zayo zaphangwa kakhulu. Njengamanje, i-PRASA isenqubweni yokuvuka othulini nokwakha kabusha ukuze ibuyelwe ngabagibeli bayo. Njengamanje isabelo sayo semakethe singu-4% kuphela. Izinsizakalo zokuhamba ngesitimela esisheshayo phakathi kweTshwane, eGoli ne-ORTIA zihlinzekwa yi-Gautrain futhi zilawulwa yi-GMA, okuyinhlangano ye-GDRT.

Izinsizakalo zabagibeli bamabhasi zihlinzekwa ngabaqondisi abazimele abaqashwe yi-GDRT futhi baxhaswa ngemali ye-Public Transport Operational Grant (PTOG). Imikhandlu yeDolobha esifundazweni iyasebenza futhi iyaqhubeka nokwandisa amanethiwekhi ayo e-BRT ngokwezinhlelo zazo ezivunyelwe zokuhleleka kwezokuthutha ezihlanganisiwe kanye nezinethiwekhi ezimqoka zezokuthutha zomphakathi. Eminye imikhandlu yedolobha neyendawo isasebenzisa izinsiza zamaloli edolobha azibekezele, ikakhulukazi phakathi kwamalokishi, izindawo zokudlela nezikole. Imboni yezamatekisi yiyo ethwala abagibeli abaningi kwezokuthuthwa komphakathi, osabelo sayo semakethe singaphezu kuka-80% wabagibeli kwezokuthuthwa zomphakathi. Ezinye izinsizakalo ezibalulekile zihlanganisa izinto ezithutha abafundi besikole, ama-meter taxi nezokuhamba ezibizwa nge-app yesofthiwe. Izinkinga zamanje mezinselele ezibhekene nezokuthuthwa komphakathi ziphawuliwe **Inhloso enkulu** yesigaba sezokuthutha zomphakathi se-ITMP25 ukuhlinzeka ngeNethiwekhi Yesifunda Esehlanganisiwe Yezokuthutha Zomphakathi (Strategic Provincial Public Transport Network – SPTN) esifundazweni lonke, ngezininga eliyisiqubulo, engasebenza njengohlaka lokuqhubeka nokukhishwa kwe-SPTN zemetropolitan nezinye izinsiza zokuhamba zomphakathi. Ukuhlela kwamanethiwekhi okuthutha okuvela kukhona okuvela kuziphathimandla zezokuthutha kanye nezikhungo zokuhlela kwasetshenziswa njengesiqalo sokuhlanganisa i-SPTN yokuqala yesifunda lonke. Lokhu okuqokethwe ezinhlelweni kwabandakanya ukusetshenziswa kabusha kwemizila ye-PRASA yezitimela zabagibeli kanye neziteshi, okuhlanganisa izandiso ezintathu ezingase zibe khona zemizila ye-PRASA, izigaba ezingu-1 kuya ku-3 zezandiso ze-Gauteng Rapid Rail Integrated Network (GRRIN), kanye ne-SPTN zemetropolitan. Kusetshenziswe izimiso ezamukelwe zokuhlela amanethiwekhi ezokuthutha ukuze kufakwe ku-SPTN yokuqala. Lezi zimiso zifaka ukuqhubeka kwenethiwekhi, ukuhlonishwa kwesigaba senethiwekhi kanye nezindima zezindlela zokuhamba, ukuze kuhlonzwe imigudu emikhulu, izixhumanisi ezishodayo kanye nokuphindaphindeka kwezinsiza.

Indlela yokubikezela isidingo sokuthuthwa kohambo yabe isisetshenziswa ukuze kucoliswe i-SPTN. **UMfanekiso 10-1** ubonisa i-SPTN ecatsangelwayo kanye nezindawo ezinendima enamandla kwezomnotho nakwezokuthutha nokudluliselwa phambili komphakathi kubekiwe

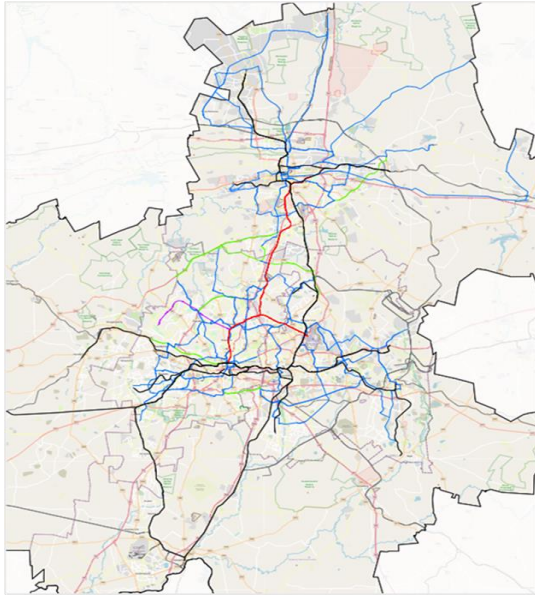
**Ithebhula 10-2.** I-SPTN ecatsangelwayo esikhathini esizayo ingase iqondise ukuhlelwa kwezinhlela ezifana ne-PRASA, i-GMA kanye nomasipala, ukuze benze ukuhlela okunemininingwane ejiyile, izingcwaningo zokuhlola amathuba okuphuthulwa komsebenzi ngempumelelo nezinhlelo zebhizinisi.

**Ithebhula 10-1: Izinkinga Zezokuthutha kanye Nezinsalele**

Issues	Challenges
<ul style="list-style-type: none"> <li>Declining user experience</li> <li>Safety and security (1LM and in-vehicle)</li> <li>Affordability of services for road-based public transport users</li> <li>Users “captive” to public transport and “not modes of choice”</li> <li>Efficiency and lack of modal integration</li> <li>Destructive competition</li> <li>Services are largely peak and commuter focussed</li> <li>Inadequate infrastructure and facilities</li> <li>Condition of facilities and lack of effective management</li> </ul>	<ul style="list-style-type: none"> <li>Integration of land-use and transport planning</li> <li>Achieving provincial wide SPTN</li> <li>Inadequate public transport funding allocation</li> <li>Transformation of the institutional environment (planning and funding in silos)</li> <li>Consensus on the role of modes</li> <li>Rebuilding the commuter rail system</li> <li>Passenger rail re-instated as the backbone of the public transport system by 2050</li> <li>Enhancing modal integration</li> <li>Achieving an integrated approach towards passenger safety &amp; security</li> </ul>

Inhloso enkulu yesigaba sezokuthutha zomphakathi se-ITMP25 ukuhlinzeka ngeNethiwekhi Yesifunda Eshlanganisiwe Yezokuthutha Zomphakathi (Strategic Provincial Public Transport Network – SPTN) esifundazweni lonke, ngezinga eliyisiqubulo, engasebenza njengohlaka lokuqhubeka nokukhishwa kwe-SPTN zemetropolitan nezinye izinsiza zokuhamba zomphakathi. Ukuhlela kwamanethiwekhi okuthutha okuvela kukhona okuvela kuziphathimandla zezokuthutha kanye nezikhungo zokuhlela kwasetshenziswa njengesiqalo sokuhlanganisa i-SPTN yokuqala yesifunda lonke. Lokhu okuqukethwe ezinhlelweni kwabandakanya ukusetshenziswa kabusha kwemizila ye-PRASA yezitimela zabagibeli kanye neziteshi, okuhlanganisa izandiso ezintathu ezingase zibe khona zemizila ye-PRASA, izigaba ezingu-1 kuya ku-3 zezandiso ze-Gauteng Rapid Rail Integrated Network (GRRIN), kanye ne-SPTN zemetropolitan. Kusetshenziswe izimiso ezamukelwe zokuhlela amanethiwekhi ezokuthutha ukuze kufakwe ku-SPTN yokuqala. Lezi zimiso zifaka ukuqhubeka kwenethiwekhi, ukuhlonishwa kwesigaba senethiwekhi kanye nezindima zezindlela zokuhamba, ukuze kuhlonzwe imigudu emikhulu, izixhumanisi ezishodayo kanye nokuphindaphindeka kwezinsiza.

Indlela yokubikezela isidingo sokuthathwa kohambo yabe isisetshenziswa ukuze kucoliswe i-SPTN. **UMfanekiso 10-1** ubonisa i-SPTN ecatsangelwayo kanye nezindawo ezinendima enamandla kwezomnotho nakwezokuthutha nokudluliselwa phambili komphakathi kubekiwe **Ithebhula 10-2.** I-SPTN ecatsangelwayo esikhathini esizayo ingase iqondise ukuhlelwa kwezinhlela ezifana ne-PRASA, i-GMA kanye nomasipala, ukuze benze ukuhlela okunemininingwane ejiyile, izingcwaningo zokuhlola amathuba okuphuthulwa komsebenzi ngempumelelo nezinhlelo zebhizinisi.



**UMfanekiso 10-1: Conceptual Province-wide SPTN**

**Ithebhula 10-2: Izindawo Zendima Enamandla Kwezomnotho Nakwezokuthutha**

1. Mabopane	9. Soweto Orlando	17. Kattlehong/Vosloorus
2. Soshanguve	10. Soweto – Maroka/Pimville	18. Vlakfontein
3. Akasia	11. Inkaba Yedolobha LaseJohannesburg CBD	19. Eldorado Park/South Gate
4. Belle Ombre/Pta CBD	12. Southgate	20. Evaton/Sebokeng
5. Mamelodi Denneboom	13. Kempton Park	
6. Inkaba Yedolobha LaseCenturion	14. Germiston	
7. Inkaba Yedolobha LaseSandton	15. Daveyton/Benoni	
8. Westgate/Roodepoort	16. Kwa Thema	

Ngokucabangela izinkomba ezisemqoka, ezihlinzekwe njengokutholakele ekubikezeleni isidingo sokuthathwa kohambo, kanye nokuqhathanisa unyaka wamanje wesisekelo nezimo ezinhle zokutshalwa kwezimali kwezokuthutha zomphakathi ngokususelwa ku-SPTN yesifundazwe lonke, kubonakala kuthuthukiswa noma okungenani kungabikho ukonakala. Lokhu kungenzeka naphezu kokulindeleka kokukhuphuka kwamavolumu abagibeli

bezokuthutha zomphakathi ngesikhathi sokuhamba okukhulu ngaphezu kuka-50%, kusuka kwabangu-4.1 kuya kwabangu-6.2 million. Isabelo sokuhamba ngomphakathi sizokhula cishe ngo-5%, kanti ukukhishwa kwegesi ye-Green-House kuzokwehla cishe ngo-5%.

IGauteng iyisifunda sedolobha esinezindawo zokusebenza zezokuthutha ezidlulela ngale kwemingcele yesifundazwe. I-PRASA isebenzisa Izinsiza Zabagibeli Bejwayelekile (Mainline Passenger Services - MLPS) emizileni eyisithupha ukusuka eGoli kuya eThekwini, eKapa, eMusina, eKomatipoort, eMonti naseGqeberha. Izibonelo zezinsiza ezisuselwe emgwaqweni zihlanganisa izinsiza ezisuka eGa-Rankuwa naseBrits esiFundazweni saKwa-Northwest, izinsiza ezisuka eSoshanguve naseHammanaskraal eLimpopo, izixhumanisi eziya eMoloto eMpumalanga naseSasolburg eFree State. Kukhona izifundo ezihlukahlukene zokuhlola okwenziwa ezingeni lesifundazwe mayelana nemizila noma imigudu yojantshi yokuhamba ngesivinini esikhulu. Izibonelo zihlanganisa ulayini oya ePolokwane nangale kwalapho, kanye nensizakalo yezezitimela yabagibeli besiyimela esisheshayo phakathi kweGoli neTheku njengokukhonjiswa ku-NATMAP2050. UMnyango Wezokuthutha (NDoT), njengegunya elinomthwalo wemfanelo, uzoba nesibopho sokusingatha ukufakwa kwemizila emisha yojantshi ephambana nemingcele yesifundazwe.

Ikhwalithi yezinsiza nezindawo zezokuthutha zomphakathi inethonya elikhulu ekusebenzeni kahle kohlelo nasekuzizweni kwabagibeli. Ukuqinisekisa ukuhambisana kuyo yonke indawo yokuhlela, kubalulekile ukuthi iziphathimandla zokuhlela zivumelane ngezindinganiso ezincane ezizosebenza ekwakhiweni kweziteshi, izinhlobo nobukhulu bezinsiza zokuhamba zomphakathi ezisuselwe emgwaqweni, kanye nezinsiza ezincane ezidingekayo kubagibeli. I-GDRT ingadlala indima ebalulekile ekuthuthukisweni kwezindinganiso ezinjalo nasekuhlizekeni ukuvumelana phakathi kwabathintekayo.

Kukhona izici ezinqamulayo ezisebenza ohlelweni olubanzi lwezokuthutha futhi ezibalulekile ekusebenzeni kahle kwenethiwekhi yezokuthutha zomphakathi, okufanele zicatshangelwe ukukhuthaza izokuthutha zomphakathi esifundazweni. Lezi zindaba zifaka ukuhlanganiswa kokusetshenziswa komhlaba nezokuthutha zomphakathi kanye nokuthuthukiswa kwezindawo ezicishe zisebenzise iziteshi (Transit-Oriented Development - TOD), ukuhlanganiswa kokusebenza kwe-SPTN neCentre Yokuphatha Ezokuthutha (TMC), indlela ehlanganisiwe yokuphepha, amathikithi ahlanganisiwe nolwazi (MaaS), ukufinyelela kokuqala nokugcina iziteshi zezokuthutha zomphakathi, kanye nokusetshenziswa kwemigomo yokufinyelela okujwayelekile.

Ukuze kuthuthukiswe ngempumelelo inethiwekhi nohlelo lwezokuthutha zomphakathi, kumele kucatshangelwe indlela yokuthuthukiswa kokusebenza kweziNhlango Zokulawula Zesifundazwe (Provincial Regulatory Entities – [PRE]) kanye nokusungulwa okungenzeka kweziNhlango Zokulawula ZoMasipala (Municipal Regulatory Entities – [MREs]). Ukuze kuqedwe ngempumelelo izicelo zamalayisense okusebenza, kungase kudingeke ukuthi kuthuthukiswe ithuluzi ledijithali lokuhlaziya isidingo nokuhlizekwa kwezokuthutha zomphakathi. Ubuchwepheshe bungadlala indima yokwenza kube lula ekusebenzeni nasekuthuthukisweni kohlelo lwezokuthutha eGauteng.

Ikhono lezinhlango kumele lihambisane nezindima nemithwalo yemfanelo enikezwe izigaba ezihlukahlukene zokuphatha, futhi kuqhubeka ukwakhiwa kwekhono phakathi kwezinga lesifundazwe nelezindawo zomasipala. Ukunxenxa abahlinzeki bezinsiza zezokuthutha



zomphakathi ukuhlinzeka izinsiza kuzokhula njengoba uhlelo oluhleliwe kanye ne-SPTN lukhula.

Kutuswa ukuthi i-GDRT isungule uhlelo ngokubambisana nomkhakha wezithuthuthu zemini bus taxi, ukuze kusizwe ekuqeqeshweni kwalomkhakha kanye nasekulungiseleleni ukuhambela izingxoxo zokuhlinzeka ngezinsiza zokuhamba ezisemthethweni emigudwini kanye nezindlela ze-SPTN.

Kukhona izici zezokuthutha zomphakathi eziphakanyisiwe okufanele zinakwe ngokushesha, ezihlanganisa:

- Uphenyo lokuhlola amathuba okuphothulwa komsebenzi ngempumelelo mayelana nendlela yokwenza yesifundazwe, ngokusekelwe endleleni ye-DoT yokudluliselwa kwemisebenzi yezitimela ezithutha abagibeli iye esifundazweni;
- Assessment of the implications for the province of the National Public Transport Subsidy Policy and the implementation thereof;
- Ukusungulwa kohlelo lokusebenzisana nembali yezamatekisi, ukusiza nokulungiselela le mboni ekubambeni iqhaza ezinkontikeleni zokuhlinzeka kwezinsizakalo zezokuthuthwa komphakathi ezingaphansi kwezimiso ku-SPTN;
- Ukwakha izindlela zokulandelelwa nezindinganiso ngengqalazizinda yezokuthuthwa komphakathi, iziteshi, kanye nezindawo lapho izinhlobonhlbo zezinto zokuhamba zidibana khona, amarenki nezikhungo ezihlobene nezokuthuthwa komphakathi kanye nomasipala;
- Ukusungula ithuluzi kusetshenziswa iqoqo lemininingwane (data) ukusiza iziNhlango Zokulawula Zesifundazwe (okungenzeka kube yiziNhlango Zokulawula ZoMasipala zesikhathi esizayo) ngokuyekwa ukusetshenziswa kwezindlela ze-OL;
- Ukuqhuba ukuhlaziywa kwamathuba okuphothulwa komsebenzi nokusungula isu lokufezekisa komsebenzi lokwenza ezokuthuthwa komphakathi kuSebenziseke Kalula futhi kuFinyelelwe Yiwo Wonke Umuntu Kungakhathaliseki Iminyaka Yokudala Nokukhubazeka, kanjalo nendlela yokuqhutshwa komsebenzi ngezigaba ngezigaba;
- Ukuqalisa isistimu yesifundazwe sonkana sokukhishwa kwamathikithi nokukolelqa kwezimali; kanye
- Nokusungula ukuphepha kwezokuthuthwa komphakathi okudidiyelwe kanye nesu lokufezekisa umsebenzi wokuphepha.

## 11. Uhlelo Lwezokuthuthwa Kwezimpahla

Ukuqhudelana kwenzeka phakathi kwezinhlelo zokuhanjiswa kwempahla, hhayi phakathi kwemikhiqizo, izimpahla noma ngisho nezindlela zokuhamba. Impumelelo yezinhlelo zokuhanjiswa kwempahla incike ekutheni imisebenzi ehlukeneyo yezokuthutha ngaphakathi kohlelo lwempahla ingahlanganiswa kanjani ukuze kuqinisekise ukuhamba okungenazihibe kwezimpahla kusuka endaweni yemvelaphi kuya lapho ziya khona.

Ezingeni le-ITMP25, izici zokuthuthwa izimpahla zigxile ikakhulukazi kwezokuthutha izimpahla kanye nemisebenzi ehlobene nayo. Igama elithi "izimpahla" lisho lonke uhlobo lwezinto, kufaka phakathi izinto ezingakacutshungulwa, izimpahla ezigqityiwe, imikhiqizo yezolimo, izimpahla zabathengi, izimpahla zezindiza, kanye nezimpahla ezihanjiswa ngomgwaqo nangoyantshi.

Ukuthutha izimpahla eGauteng kuthubeleza ikakhulu ngemigwaqo, kuyilapho ezokuthutha ngezitimela usetshenziselwa izinto eziningi ezithuthwa amabanga amade, njenge-iron ore noma amalahle, kanye namakhonteyina nezitimela ezithwala izimoto. Ukuthuthwa kwezimpahla ngezindiza kugxile kakhulu esikhumulweni sezindiza i-OR Tambo International eKempton Park, nakuba imithamo emincane ithwalwa yiLanseria International Airport naseWonderboom Regional Airport eGauteng. Kukhona futhi imigudu yemizila ehlukehlukehle ethwala izimpahla ezihlukene eGauteng, kanti ama-drone aqala ukuba wusizo ekudilivweni kwamaphasela ebangeni eliya kumakasimende.

Lokho okuvame ukwenziwa kakhulu kuba nomthelela ekuhlalweni kwezici zokuthuthwa kwezimpahla kuhlanganisa iNkathi Yentuthuko Esheshayo (4th Industrial Revolution [4IR]), ukushintsha kwamazinga okushisa wembulunga yomhlaba, izindlela zokuhamba ezisimeme, isidingo sokubheka umthelela emphakathini, kanye nokuziphatha kwezabathengi. Okuvame ukwenziwa kwasekhaya okubalulekile kuhlanganisa ukugxila okusha emalokishini, imijondolo, namahostela, izinguquko ezilindelekile esidingweni sobungako bezimpahla, ukushintshela kwenye into yokuhamba, imizila yezokuthutha ehlelwe kahle esiza ngokuthuthwa kwabantu ngempumelelo kakhudlwana (Corridors of Freedom), kanye nezindawo ezikhethekile ezihlelwe ukuthuthukisa utshalo-mali namathuba emisebenzi (Special Economic Zones [SEZ]). Ukunaka kunikezwa ukudanjiswa kwamagesi akhishwa ngamaloli kanye nokwenza ukuthuthwa kwezimpahla kusuke ezintweni zokuhamba zezimoto kuye emizileni yezitimela.

Ukushicilelwa kwakamuva kwecebo elihlongoziwe lokuhlela ukuthuthwa kwezimpahla kuchazwe kafushane, kanti lolu hlelo luqhubeka ngokubeka umongo wokuhlelwa kwe-logistics yezimpahla. Lokhu kuhlanganisa izinqumo zomthetho ezibuyekeziwe, izinqubomgomo, imibiko kanye nezifundo, umbono, izimiso kanye nezinhloso ze-logistics yezimpahla, ukuhlela ukufinyelela okuthathu, kanye nokuqeqeshwa nokuthuthukiswa kwamakhono.

Ingxenywe elandelayo ifaka isu le-logistics yezimpahla eliqala ngokuchaza uhlaka, bese liqhubeka nezindikimba eziyisikhombisa noma izindawo zokugxila, lapho izinqubomgomo nezilawuli ze-logistics yezimpahla zicutshungulwa ngaphansi kwezindawo zokugxila ezithile.

Uhlaka lwesu lokufezekiswa komsebenzi mayelana ngokuthuthwa kwezimpahla luhlanganisa okulandelayo:

1. *Isidingo sezici zokuthuthwa kwezimpahla*, kuhlanganise ukuthuthwa noma ukusuka kwezimpahla ezindaweni ezisuka kuzo kuya lapho ziya, ukuphepha nokuvikeleka kanjalo nokusabalaliswa kwezimpahla zithuthwa yizinhlobo ezihlukene zokuthutha.
2. *Imizila yezici zokuthuthwa kwezimpahla*, okubandakanya ukusetshenziswa komhlaba, imizila yokuthuthwa kwezimpahla, imizila yokuthutha eyakhelwe ngokukhethekile ukuthuthwa kwezimpahla, imigwaqo nemizila yezitimela okwakhelwe ukugwema izindawo eziphithizelayo zedolobha, izindawo lapho kudibana khona izinhlobo zezinto zokuthutha ukuze kudluliselwe izimpahla, izindawo zezinsizakalo ezihlukehlukehle zokuthuthwa kwezinto kanye nezindawo ezinendima enamandla kwezomnotho nezokuthutha.
3. *Ingqalasizinda yezici zokuthuthwa kwezimpahla*, njengezindawo ezisamabhuloho zokukalwa kwesisindo somthwalo, uhlelo lokukala isisindo semoto ihamba ngaphandle kokuma, izindawo zezitolo zokuphumula kwabahamba ngamaloli, izindawo amaloli ama kuzo ngaphambi kokulayisha umthwalo noma ukudiliza, izindawo zokushaja izimoto ezihamba ngogesi noma ezihamba ngophethiloli.

4. *Ukuqhutshwa kwemisebenzi yezici zokuthuthwa kwezimpahla*, okubandakanya ukusetshenziswa kokusimama, izimoto ezisebenzisa imithombo yamandla esimeme nengenayo imithelela emibi endaweni yezemvelo, ukusebenzisa imizila kangcono nokubekwa kwezikhathi ukuze kongiwe isikhathi nezindleko kanye nokuphuthula umsebenzi ngempumelelo, ukulandelelwa kwesimo samanje nokulandelela umlanso nokuthubeleza kokuthile ngokuhamba kwesikhathi, nokuthuthwa kwezimpahla zisuka endaweni okusukwa kuyo ziya endaweni ezidilivwa khona bese ngokusuka endaweni ezidilivwa khona ziya lakho ikhasimende likhona.
5. *Umthetho wezici zokuthuthwa kwezimpahla nokulawula*, okubandakanya umthetho, izinqubomgomo, ukukwazi ukulawula izinqubo ngaphandle kokungenelela kosizo lwangaphandle, izindinganiso ezisekelwe endleleni umsebenzi owenziwa ngayo nokulawulwa kokulayisha ngokweqile.
6. *Ukuqaliswa kwezici zokuthuthwa kwezimpahla*, okubandakanya ukuqashwa kwezilinganiso zendlela umsebenzi ohamba ngayo nokusingathwa, appropriate KPIs, key projects and initiatives.
7. *Ukuxoxisana nezemboni yezici zokuthuthwa kwezimpahla*.

Izinhlelo ezihlukahlukene ziye zaphakanyiswa, ezihlanganisa ukufakwa komthwalo ohamba emigwaqeni ungene ezitimeleni ngemithwalo ethuthekayo ngezitimela, ukuthuthukiswa kwemizila esebenza kangcono yokuhanjiswa kwezimpahla kanye nemizila yezimpahla eziyingozi kanye nemithwalo emikhulu kakhulu (abnormal loads), ukwenza izikhuzo zezinhlobonhlobo zezinto zokuthutha lapho kudluliselwa khona imithwalo zamanje nezihleliwe zisebenze kangcono kakhulu, ukusungulwa kwezindawo zokuphumula kwamashayela amaloli, ukuthuthukiswa kokuqhutshwa kwemisibenzi yokuthuthwa kwezimpahla okusimeme kakhudlwana kanye nokuthuthwa kwezimpahla zisuka endaweni okusukwa kuyo ziya endaweni ezidilivwa khona bese ngokusuka endaweni ezidilivwa khona ziya lakho ikhasimende likhona ukuba kwenziwe kusebenze kangcono ngezikhungo ezingaphansi kwezinkulu.

Indawo yokugcinwa kwezimpahla (warehouse) yemininingwane yomthwalo idinga ukuvuselelwa njengengxenywe yesikhungo seminingwane esifeza imisebenzi eminingi yaseGauteng nokugxila okukhulu ekuthuthukisweni kwamakhono afanele kanye nokuqeqeshwa ezicini zokuthuthwa kwezimpahla. Lokhu kuhlangukisa nokuthuthukiswa kokulawulwa kwemithetho eqapha ukulayisha ngokweqile ngokusebenzisa ubuchwepheshe bokukalwa kwesisindo semoto ihamba ngaphandle kokuma, ukuzilawula kwezinhlangano ngaphandle kokungenelela kwangaphandle nezindinganiso ezisekelwe ekusebenzeni.

Iqoqo lezimiso nezindinganiso kugfanele lisungulwe ukuba lisetshenziselwe izinkomba ezisemqoka zendlela umsebenzi oqhutshwa ngayo, futhi ekugcineni, kufanele kuhlangukise imihlangano yomkhakha wezokuthutha umthwalo, izinkundla zembino yokuthuthwa kwezimpahla, izinhlangano ezigxile ekuthuthukisweni kwamakhono futhi izinhlangano zemboni kufanele kuxoxiswane futhi kubanjiswane nazo.

## 12. Uhlelo Lwezikhumulo Zezindiza Nolwezemboni Yezindiza

Le ngxenywe isingida isimo samanje nesesikhathi esizayo sezikhumulo zezindiza zalesi sifunda, indawo yezezindiza, kanye nezindlela zokuhamba ezisebenzisana nezikhumulo

zezindiza. Nakuba i-ITMP25 igxile kakhulu ezintweni ezihamba phansi, le ngxenye ichaza ngendima ebalulekile izikhumulo zezindiza eziyidlalayo kungqalasizinda yezokuthutha, nokuba nomthelela ekuhloleni kwengqalasizinda yezinto ezihamba emigqwaqeni kanye nezitimela.

Isigaba siqala ngokubeka ukubaluleka kwezikhumulo zezindiza njengezindawo ezibalulekile ohlelweni lwezokuthutha lweGauteng, ikakhulukazi ngezithonya zazo ekuphathweni kokufinyelela kwezimoto nezitimela. Isigaba sigcizelela ukuthi izikhumulo zezindiza zithinta kanjani ukuhlanganiswa okuhlangene kwezinhlobo ezihlukene zokuthutha futhi sigcizelela indima yezikhumulo ezinkulu ezifana ne-OR Tambo International Airport (ORTIA) ne-Lanseria International Airport (LIA) ekwakheni umbono wezokuthutha kule ndawo.

Nakuba izikhumulo ezinkulu ezifana ne-ORTIA ne-LIA zithathwa ngokucophelela, izikhumulo ezincane ezifana ne-Grand Central ne-Rand Airport zihlaziywa ngokufushane ngenxa yokuthonya kwazo okuncane ezinhlelweni zokuthutha zomhlaba. Isigaba siphinde sihlaziye amaprojekthi ezikhumulo zesikhathi esizayo, kuhlanganise i-Vaal Aerotropolis kanye nokwandiswa kwe-Wonderboom National Airport, okuthinta kakhulu ukuthuthukiswa kwezakhiwo zendawo.

Isigaba sihamba phambili ekuhloleni isiphakamiso se-ITMP25 sika-2013 sokwakha isikhumulo sezindiza sesithathu eGauteng. Nakuba izakhiwo zamanje zisanele, ukukhula okulindelekile kwesikhathi esizayo kungase kudinge amandla amasha, okungaphezu kwalokho i-ORTIA ne-LIA ezinako ukukwazi ukuletha. Isu Lezikhumulo ZasePhrovinsi linconywa ukuze lihole ekuthathweni kwezinqumo mayelana nalesi simo. Isu kufanele libheke izinto ezibalulekile ezifana nokuthi isikhumulo sizobekwa kuphi, imithelela yemvelo, izindleko, ukulondolozwa komhlaba, ukukhuliswa kwezikhumulo ezikhona, ukuphathwa kwezikhala zezindiza, kanye nokuhambisana nemigomo yesizwe. Ngokubaluleka, isigaba siphakamisa ukuhlela ukukhuliswa kwezikhumulo ezikhona ngaphambi kokuzibophezela ekwakhiweni kwezikhumulo ezintsha.

I-ORTIA, isikhumulo sezindiza esisebenza kakhulu eNingizimu Afrika, kulindeleke ukuthi ibone ukukhula okukhulu kwezingodo, kufinyelele ku-43 million zabasebenzisi bonyaka ngo-2050. Uhlelo leNhloso-mbono Eyinhloko luzoba nezinhlelo ezilandelanayo zokwandisa ukwamukela isidingo esikhulayo, kuhlanganise nomkhawulo wokwamukela u-80 million wezingodo ngokuthuthukiswa kohlelo lwezitimela ezintathu. I-Western Precinct kulindeleke ukuthi ifinyelele ekuphumeleleni ngo-2034, okuzoba nomthelela ekuthuthukisweni kwesikhumulo phakathi kwe-midfield precinct, lapho izikhumulo zezivakashi, izinkundla zokuhlala, nezikhungo zokuthutha impahla zezindiza zizobekwa khona.

Amaprojekthi amakhulu ezakhiwo ku-ORTIA ahlanganisa ukwakhiwa kwesikhungo seMidfield Cargo Terminal ngezigaba, esizokhulisa amandla okuthutha impahla esikhumulweni. Ngaohezu kwalokho, isigaba sikhuluma ngezidingo zokuthuthukiswa kwemigwaqo nezitimela ukuze kusekelwe lokhu kuthuthukiswa. Amaprojekthi wemigwaqo ahlanganisa ukwandiswa kwemigwaqo ye-K86, K88, ne-K90, kanye nokwakhiwa kokuxhumana okusha ngokusebenzisa i-PWV 14 ne-N12. Inethiwekhi ye-GRRIN yezezimoto nayo kulindeleke ukuthi ixhunywe kutheminali ye-Midfield, okuhamba phambili ekuhlanganiseni isikhumulo ezinhlelweni zokuthutha zomphakathi zalesi sifunda.

I-Lanseria International Airport (LIA), isikhumulo esizimele, siye sadlondlobala ngokukhula eminyakeni edlule, isuka ekubeni yisikhumulo sezindiza sezinga eliphansi saya emkhakheni wokuhamba kwezindiza zomphakathi. I-LIA kulindeleke ukuthi imumathe abagibeli abaphakathi kuka-7.5 miliyoni no-14 miliyoni ngonyaka kungakedluli u-2050, futhi kulindeleke

ukuthi sikhule sifinyelele ku-40 miliyoni ngokusebenzisa iNhloso-mgomo Eyinhloko ye-Lanseria Airport City.

Inhloso-mgomo ikhomba izindawo ezimbili ezinkulu zokuthuthukisa: i-Northern Precinct, engathwala izivakashi ezingu-18 miliyoni, kanye ne-Midfield Precinct, ezosiza ekukhuliseni amandla esikhumulo ukufinyelela ku-40 miliyoni ngezinhlelo ezimbili zokuthutha. Amaphrojekthi asekelayo ahlanganisa ukuthuthukiswa kwemigwaqo, njengokwandiswa kwe-Ashenti Road/K31 kanye nokwakhiwa kwe-PWV3 highway, okubalulekile ekukhuleni kwesikhumulo.

Okubalulekile futhi ukuhlela ukwandisa inethiwekhi ye-Gauteng Rapid Rail Integrated Network ibe nesixhumanisi ne-Lanseria International Airport.

I-Wonderboom National Airport, esendaweni enyakatho yePretoria, ihlela ukuguquka ibe isikhumulo sezindiza esisebenziseka kahle komnotho. Amaphrojekthi abalulekile ahlanganisa ukwandiswa kwe-rundway eyinhloko kanye nokuhlelwa kabusha kwesikhumulo njengebhizinisi, kuhambisana nohlelo lwezokuthuthukiswa kweDolobha le-Tshwane. Ngo-2050, i-Wonderboom kulindeleke ukuthi iphathwe u-192,000 wezivakashi zonyaka, nakuba isigaba sikhumbuza ukuthi lezi zibikezelo zibhala amaphutha.

Iphrojekthi ye-Vaal Aerotropolis ehakanyisiwe, kuyiphrojekthi yezentuthuko enkulu ehlose ukwakha isikhumulo sezindiza esisha kanye nesikhungo yezokuthutha eGauteng. Le phrojekthi ingxenye ye-Sedibeng Vaal Special Economic Zone (SEZ) futhi ihlelwe ukuba imumathwe izivakashi ezingu-7.2 miliyoni kanye nezinkulungwane ezingu-150,000 zamathani wemithwalo ngonyaka. I-Aerotropolis ifaka ibandakanya izinhlelo zedolobha lesikhumulo sezindiza, ezohlinzeka ngenqwaba yezinhlobonhlobo zamabhizinisi, ezokungcebeleka, nezohwebo uma sibala nje okumbalwa. Njengokucishe kufane neWonderboom, le ngxenye isikhumbuza ukuthi lokhu kuhlawumbisela nokubikezela mayelana neVaal Aerotropolis kuyinto egiseleka ukuba yenzeke.

Isigaba siphetha ngokuthi izikhumulo zezindiza zaseGauteng zibalulekile emnothweni wesifundazwe kanye nohlu lwezokuthutha futhi zidinga ukuthuthukiswa kwezindawo zokuthutha ukuze kuhlangebezane nokukhula okuzayo. I-ORTIA ne-LIA zinohlelo lokukhulisa oluzothuthukisa amandla azo, kuyilapho i-Wonderboom ne-Vaal Aerotropolis zihlinzeka ngamathuba okuthuthukiswa kwezakhiwo. Ake kucutshungulwe ukuthi isikhumulo sezindiza sesithathu somhlaba sisebenza kahle eGauteng, kodwa ukuhlela okukhona kufanele kugxile ekwandiseni izikhumulo ezikhona ukuze kuhlangebezane nesidingo esizayo ngendlela eshibhile futhi ehambisana nemvelo.

Ukudidiyelwa kwezokuthutha kwezindiza, izimoto, nezitimela kubalulekile entuthukweni yesikhathi esizayo yesifundazwe, futhi ukuhlela ngokukhalipha kuzoba kubalulekile ukuze kuqinisekise ukuxhumana okushelelayo phakathi kwezindawo zaseGauteng zezindima ezinamandla kwezomnotho nezokuthutha.

### **13. Ukusingathwa Kwengqalasizinda Yezemigwaqo**

INingizimu Afrika, neSifundazwe saseGauteng kubhekene nezinselele eziningi zentuthuko, kuhlanganise nezithiyo ezibhuhntshisa ukusebenza kahle kwengqalasizinda, kanye nezinselele zezomnotho nezenhlalo ezifana nokuntuleka kwemisebenzi, ububha, kanye nokungalingani. Inggqalasizinda yezomnotho, kuhlanganise nokusingathwa kwengqalasizinda yezemigwaqo, kungenye yezinto eziphambili ekuthuthukisweni komnotho. Izakhiwo zomgwaqo zinamandla okuhlinzeka imbuyiselo ephakeme emalini yokuqhuba ekutshalweni

kwezimali kunezinye zonke izinhlobo zezakhiwo. Izothutha zomgwaqo yibhizinisi elibalulekile emnothweni, kodwa kunezinsalelo ezihlukahlukene ezivimbela isikimu sokuthutha ukuthi sibe nengxenyane efanele kumgomo wezomnotho nezomphakathi weNingizimu Afrika. Enye yalezi zinsalelo iwukuphumelelisa amaprojekthi ezakhiwo zomgwaqo, lapho ukusetshenziswa komgwaqo okwandayo, ukutshalwa kwemali okuphansi, kanye nokugcinwa okunganele kuholele ezindlekweni eziphezulu zokuthutha kanye nokuvimba izithuthi.

Ukuklama okunemiphumela emihle, ukwakhiwa nokunakekelwa kwemigwaqo kubalulekile kumnotho wesimanjemanje osebenza kahle nochumile. Imigwaqo idlala nendima ebalulekile yokuhlangabezana nezidingo zomphakathi kanye nokukwazi ukuhamba kwabantu abahlala emijondolo elokhu iya isabalala neze, futhi ukwakhiwa kwemigwaqo nokugcinwa kwayo isesimweni esigculisayo kuhlinzeka ngamathuba axazulula izinkinga ezifana nokuntuleka kwamathuba emisebenzi. Ngokukhathazeka okukhulayo mayelana nokushintsha kwamazinga okushisa embulunga yonke nokungcoliswa komoya, indima yemigwaqo idinga ukusuka ekuhlinzekeni izimoto ezingezabantu ngamunye ngamunye nokuthuthwa kwezimpahla kuye ekusekeleni izinhlelo zokuhamba edididiyelwe ezifana nokuhamba ngezinyawo, ukuhamba ngebhayisikili, izithuthi zomphakathi kanye nokushintshela ekuthuthweni kwezimpahla ngezitimela hhayi ngezimoyo.

Abasebenzisi bemigwaqo bathemeble kungqalasizinda ephephile nesebenza ngokushelala. Izindlela kumele zithuthukiswe futhi zigcinwe zicatshangelwe nasekutheni imiphakathi yasemaphandleni ibhekene nokuhlukumezeka ngenxa yesimo esibi sezinye izindlela zokufinyelela. Abagibeli bezinto zokuhamba zomphakathi abasebenzisa amabhasi namatekisi nabo bathemeble kungqalasizinda esebenza kahle yemigwaqo. Izinsizakalo zokuthuthwa komphakathi zidinga ukuthi imigwaqo ikhandwe ngokwanelisayo futhi inakekelwe kahle ngendlela yokukhuthaza ukusetshenziswa kwezinto zokuhamba ezithutha umphakathi. Ukuthuthwa kwezimpahla kuyimbangela enkulu emnothweni futhi nakho kudinga uhlelo lwezothutha oluphumelelayo.

Iziphathimandla Zemigwaqo eNingizimu Afrika zinesibopho sokuhlinzeka uhlelo lwezothutha olunokwethenjela, olusebenza kahle, olushelelayo noludidiyelwe kahle olweseka imigomo yezwe yezentuthuko yezomnotho nezenhlalo. Zonke iziphathimandla zomgwaqo zinesibopho sokuhlela, ukuklama, ukwakha, nokunakekela ingqalasizinda yemigwaqo; ukuvikela ukuthembela komphakathi kungqalasizinda yemigwaqo; ukuqinisekisa ukuqhubeka kokusebenza kohlelo lwezothutha; nokukhuthaza ukuphepha kwezimoto kungqalasizinda yemigwaqo.

Inggikithi yengqalasizinda yezemigwaqo engaphansi kokuqondisa koMnyango Wezemigwaqo Nezokuthutha wasegauteng (Gauteng Department of Roads and Transport [GDRT]) inobude buka-5,635 km, kanti u-4,349 km (77%) uyemigwaqo yetiyela. Imigwaqo yesifundazwe seGauteng ihlanganisa amabhulohu angu-676 kanye nemigudu yamapayipi ahamba ngaphansi kwemigwaqo angu-428.

Sukukonke, ngamakhilomitha angu-22 bhiliyoni ahanjwa yizimoto unyaka ngamunye engqalasizindenini semigwaqo ye-GDRT, u-579 miliyoni okungamakhilomitha ahanjwa yizimoto ezinkulu. Iningi lezimoto (99%) uhamba ezigqwaqeni yetiyela.

I-GDRT inesibopho sokunakekela ingqalasizinda sayo sezokuthutha. I-Road Infrastructure Strategic Framework for South Africa (RISFSA), ka-Okthoba 2006, inikeza umhlahlandlela wokusingathwa kwengqalasizinda yemigwaqo. Ukuhlolwa okuvamile kuyadingeka ukuze kutholakale ukuthi ingqalasizinda isesimweni esinjani, bese kuchazwa ngokusebenzisa i-Visual Condition Index (VCI). I-RISFSA ibeka umthetho wokuthi kungabi khona okungaphezu

kuka-10% kwekhwalthi yomgwaqo okungafanele kube "Kubi." Ukuze i-GDRT ikwazi ukuthola izimali kusuka ku-Provincial Roads Maintenance Grant (PRMG), ukuhlolwa okuvamile kwezithombe kumele kwenziwe. Ngo-2023, ukuhlolwa kwezithombe kwenziwe, futhi ngokuvamile i-VCI yatholakala iku-67%, kanti u-18% wekhwalthi ye-nethiwekhi ubekwe ngokuthi "Kubi" noma isimo esibi kakhulu. Lokhu kudlula u-10% ovunyelwe. Ngaphambi kuka-2023, ukuhlolwa kwe-VCI okuhlolwe ngo-2015, i-VCI yayingu-78%, no-4% kuphela izindawo ezichazwa ngokuthi "Kubi" noma eziphazamisekile. Kungakhonjiswa ukuthi isimo semigwaqo emigwaqweni ye-asphalt sithintekile kakhulu phakathi kuka-2015 no-2023. Okunye okulinganisiwe okusetshenziswe ukuvavanywa kwentengo yokusebenzisa imoto ngamunye ngamakhilomitha (VOC). Kwezindlela ezisendlini, i-VOC yayingama-R 9.10/km ngokuhlolwa kuka-2023, futhi kwaba ngu-R 6.89/km ngo-2015.

Kwaqhutshwa ukuhlaziywa kwezidinfo ukuze kutholakale uxhaso oludingekayo ukuze kuthuthukiswe isimo semigwaqo ekhona. Isidingo soxhaso sibalelwa kuphela ngokuqhuba imisebenzi yokuvuselela okungabandakanyanga izimali zokunakekela okuvamile okufana nokuvalwa kwama-potholes, ukusikwa kotshani, ukulungisa amaphethelo aseceleni komgwaqo, nokulungisa ingqalasizinda yezitamkoko (drainage), njll:

- Ukunakekela okugwema umonakalo (isifutho senkungu/ukuphesha kabusha) kwemigwaqo yetiyela;
- Ukulungiswa kwemigwaqo yetiyela;
- Ukuthelwa kabusha kwenhlabathi yamatshe (gravel) emigwaqeni yothuli; kanye
- Nokuthuthukiswa kwemigwaqo yenhlabathi yamatshe ibe sezindinganisweni zemigwaqo yetiyela.

Okulandela yizimo ezingase zibe khona ezimbili (2) ezaphenywa:

- Isimo 1 sikhapha umphumela wokubambezeleka komsebenzi wokubuyiselwa, ukuvuselela, ukuthela amatshe kabusha, nokuthuthukisa ngokushesha; kubonisa isidingo sangempela sesabelomali somsebenzi wokubuyisela wengqalasizinda yemigwaqo uma kungekho izithiyo eziphathelene nezinsizakalo. Isidingo esiphuthumayo semigwaqo yetiyela singu-R4.155 bhiliyoni, kanti ezemigwaqo yobhuqu singu-R1.166 bhiliyoni, ngokungezelela isikhwama sonyaka esingu-R1.464 bhiliyoni semigwaqo yetiyela kanye ne-R246 miliyoni semigwaqo yobhuqu ukuze ivuselelwe ibe sesimweni esithi asifane.
- Isimo 2 sihamba ngendlela enengqondo, sithola izinga lokuxhasa elithuthukisa futhi ligcine izimo zemigwaqo yetiyela ibe sezingeni elihle eminyakeni engu-10 ezayo, futhi lithuthukise ugqinsi lobhuqu emigwaqweni bengqalasizinda semigwaqo yobhuqu ibe sezingeni elimaphakathi nendawo kuya phezulu eminyakeni engu-10 ezayo. Isidingo soxhaso lonyaka singu-R1.763 bhiliyoni ngonyaka semigwaqo yetiyela kanye no-R283 miliyoni ngonyaka ngemigwaqo yobhuqu.

U-90% wamabhuloho nemigudu yamapayipi ahamba ngaphansi komgwaqo kusesimweni esihle kakhulu noma esimweni esihle; u-8% esimweni esingesibi; no-2% osesimweni esibi noma esibi kakhulu.

The lack of maintenance on traffic signals was raised as a major problem. The main cause of signal outages is chronic vandalism, mainly cable theft but poles also get removed. The budget allowed for fixing and maintaining traffic signals is inadequate.

UMnyango KaZwelonke Wezokuthutha (National Department of Transport [NdoT]) unegalelo elikhulu ekuqinisekiseni ukuphepha eNingizimu Afrika. Indima nesibopho se-NDOT kubandakanya ukusungula nokwenziwa kwemithetho yokuphepha emgwaqeni isebenze,

kubeke isibonelo sezindinganiso zikazwelonke, kanye nokuhlobanisa imizamo nezifundawe nababambiqhaza. I-NDOT isisungule iSu LikaZwelonke Lokufezekisa Ukuphepha (National Road Safety Strategy) 2016-2030 njengokuzobeka isisekelo sokwehlisa izinhlekelele zezimoto emigwaqeni nesibalo sabafayo eNingizimu Afrika. I-Road Traffic Management Corporation (RTMC) inomthwalo obalulekile wokwehlisa isibalo sezinhlekelele zezimoto, ukufa nokulimala emigwaqeni yaseNingizimu. Injongo eyinhloko yehlangano wukuba negalelo ekubeni kwemigwaqo ephephe kakhudlwana kuleli zwe kusetshenziswa izinhlelo zokufundisa nokuqwashisa. Isu lokufezekiswa komsebenzi lesifundazwe saseGauteng endleleni yesixazululo sezindlela ezinhlanu, okuwukuthi ukuFundiswa; Ubunjiniyela; Ukwenziwa Kwemithetho Isebenze; Ezemvelo Nokuhlola. Isifundazwe saseGauteng sinesibalo esiphezulu sabafayo ezingozini zezimoto okuholela kanye nokukhubazeka emzimbeni unomphela. Ngokuvumelana nombiko weKomiti Lokuphepha Komphakathi, isifundazwe siqophe isibalo sabantu abashonile ku-9 730 okwabangelwa izinhlekelele zezimoto ezingu-8 741 ezabulala abantu kusukela ngo-2018–2021, nabashona abangu-2 610 ngo-2021. Lokhu kulingana nesilinganiso esingaphezu kwabafayo (7) ngosuku.

Ukuhlola kwenziwa ezindinganisweni zokuklama ze-GDRT ukuze kutholakale ukuthi ziyahlangabezana yini nesidingo nokubheka yinoma ngabe yiziphi ezinye izinkinga. Kwatholakala ukuthi ngokwengxenywe enkulu ziyahlangabezana, kwase kuqashelwa ukushiyeka okulandelayo:

- Imizila yokuhamba okungeyona eyezimoto ibingahlinzekwanga ngokwanelisayo; futhi
- Ezinye izinsizakalo zobunjiniyela zingase zisebenze endaweni ebekelwe lo msebenzi.

I-NDOT ne-SANRAL baphinde bahlola izindinganiso zabo futhi balungiselela izindinganiso ezivuselelwe zokuphatha nokuphatha kwezingxenywe zokuhamba okungaphumi emgwaqweni kanye nezikhawu zokuhamba zomphakathi / amaphuzu okuma. Kuye kwaphakanyiswa ukuthi i-GDRT yamukele lezi zindinganiso futhi iguqule imidwebo yayo yezindinganiso ngokufanele.

Isifunda saseGauteng sinezinhlelo zomgwaqo ezihlelwe ngokuhleleka okwandayo. Lezi zihlanganisa uhla lwezindlela ezinkulu (imigwaqo ye-PWV) kanye nezindlela ezinkulu ezihamba phambili (amaphuzu e-K). Kunokuvumelana okujwayelekile ukuthi lokhu kunikeza isakhiwo ekuthuthukisweni kwesifunda. Uhlelo lweGauteng Strategic Road Network luthathwe kakhulu ekuhlelweni kwezimigwaqo okwenzelwe i-SANRAL, izifunda ezinkulu kanye nezikhawulumeni zedolobha/zomphakathi, okukhona ukuvumelana okujwayelekile mayelana nokuhlelwa kwezimigwaqo phakathi kwezinhlelo ezintathu zoHulumeni.

I-GDRT kufanele ihlale ivuselele i-Strategic Road Network (SRN) ekhona njengoba i-Strategic Transport Network ehlanganisa isakhiwo sokuthuthukiswa kwesikhala kwesifunda. Kufanele iqinisekise ukusetshenziswa kahle komhlaba ohlonywe ohlongozwayo we-Strategic Transport Network njengezinhlelo zokuhamba ezihlanganisiwe, lapho ukuthutha komphakathi – umgwaqo, rel, nokuhamba okungaphumi emgwaqweni – kudlala indima ebalulekile njengemoto zabantu abazimele nezimoto zokuthutha.

I-GDRT kufanele ithuthukise uhlelo lwezindlela ze-Class 1 (imigwaqo ye-freeway), ezakha umgogodla wokuhamba ngomgwaqo esifundeni. Imizila elandelayo ye-PWV ihlonzwe njengemikhombandlela ebaluleke kakhulu ekusekeleni ukuhamba: PWV9; PWV3, PWV5; PWV14; PWV15; PWV16; PWV17 enyakatho kanye ne-N17/PWV12a. Ekugcineni, kufanele kuthuthukiswe izindlela eziphuthumayo ze-K-route ezikhona kanye nokuthuthukiswa kwezixhumanisi ezintsha zemizila esemqoka ze-SRN ezisekela izindlela zokuthutha



zomphakathi, izindlela zokungena ezihambisana nezikhungo zokuthutha, kanye nezindawo zomnotho nezikhumulo zezindiza.

Izinyathelo ezilandelayo ziphakanyiswa:

- Ukuvikela Nokuthuthukisa Ingqalasizinda Yesu-mgomo Lemigwaqo YeSifundazwe saseGauteng;
- Ukuvikela Nokunakekela Ukukwazi Ukuhamba, nokucabangela Ukukwazi Ukufinyelela;
- Ukuqalisa ukuqhubeka nkalo kokuhamba kuyo yonke imingcele yomasipala nesifundazwe;
- Ukuhlala uvuselela ukuBikezela Kwesidingo Kwezokuthutha osekusunguliwe;
- Ukunakekela Nokuthuthukisa Izindinganiso Zokuklanywa Kwemigwaqo ukuze kongiwe izindleko futhi isimame;
- Ukuvuselelwa okunganqamuki kwemidwebo yokuklama maqondana nokubuka ngeso elibona ngaphansi komhlaba indlela umgwaqo owakhiwe ngayo ngokususelwa kumihlahlandlela ye-NDoT ne-SANRAL;
- Ukuqinisekisa nokwenza izimiso zokuKlama Okufinyelelwa Yibo Bonke zisebenze;
- Ukuqhubeka nohlelo lweminyaka eminingi lokwakhiwa kwemigwaqo emisha nokuvuselelwa kwemigwaqo ekhona kuhola wukuhlolwa kwengqalasizinda yemigwaqo ekhona nehlelewe ukuba khona;
- Ukwandisa uhlinzeko lwengqalasizinda yezokuthutha okungambi eqolo ngokuhamba ngezinto okungezona izimoto ekwesekweni iphuzu lokuShintshela Kokunye okungekona izinto zokuhamba okuyizimoto ngokuhamba kwesikhathi;
- Ukuqaliswa kokubambisana nomasipala abahlukahlukene ekuqalisweni kwemizila eyinhloko kanye neminye imigwaqo, ikakhulikazi ezindaweni ezintula amathuba;
- Izinhlelo Ezisiza izinkampani Zosonkontileka;
- Ukunakekela Ingqalasizinda Yemigwaqo YeSifundazwe ibe ngokweZindinganiso Zezinga Eliphezulu Kakhulu njengoba kudingwa yi-RISFSA;
- Ukuvuselela Amasistimu Okusingathwa Kokunakekelwa Kwendawo Egudla Umgwaqo ukuze kuqinisekise umsebenzi omuhle wokunakekela njengoba kudingwa yi-RISFSA;
- Ukuqalisa izixazululo ezonga imali ngokwakhiwa kwengqalasizinsu yezokuthutha nokunakekelwa kwayo ukuze kusetshenziswe kangcono izimali ezikhona;
- Ukuvikela okuqhubekayo kwemigwaqo ekusetshenzisweni okungagunyaziwe; kanye
- Nokweseka i-RTMC ukuze yehlise isibalo sabafayo nezinhlekele zezimoto kanye nokubamba iqhaza ekuhlanganisweni nasekuphumelelisweni kwemikhankaso nezinhlelo zokuphepha emiGwaqemi.

#### 14. Ukumiswa Kobuphathi Nezivumelwano Zezinhlango

Ukwabelwa kwemisebenzi emazingeni amathathu kahulumeni kulawulwa wuMthethosisekelo ikakhulukazi uSheduli 4 no-5 kanye nezingxenye ezihlobene, kanye nesigaba 11 se-National Land Transport Act, ka-2009 (NLTA). Lokhu kuchazwe ngokuningiliziwe kuSithasiselo Sokuhlolwa Kwenqubomgomo Nomthetho (Policy and Legislation Review Annexure) soMbiko othasiselayo wokuMiswa Kobuphathi Nezivumelwano Zezinhlango.

Izinga likahulumeni kazwelonke linomthwalo wemfanelo phakathi kokunye wokubeka izinqubomgomo kazwelonke nesu-mgomo, ukuhlela kwesom-mgomo lokuhlanganisa ezokuthutha zikazwelonke, ukulungiselela i-National Land Transport Strategic Framework

(NLTSF), ezokuthuthwa kwezimpahla nezezitimela, ukuhlela phakathi kwezifundazwe, ukwabela imisebenzi iye kwamanye amazanga kahulumeni, ukuqeqesha nokuhlola izifundazwe nomasipala abahlukahlukeni, kanye nokuhlela ezokuthutha phakathi kweNingizimu Afrika nakwamanye amazwe. Iphinde ibe nomthwalo wemfanelo wemisebenzi ebhalwe ku-Sheduli 4 kuMthethosisekelo ngokuhlanganyela nezifundazwe, okuhlanganisa ukuthutha komphakathi, ukulawulwa kwezimoto emigwaqeni, kanye nokubhaliswa kwezimoto.

ISifundazwe sinisibopho phakathi kokunye sokubeka izinqubomgomo namasu-mgomo wokufezekiswa kwemisebenzi ngaphakathi kohlaka lokusebenza likazwelonke, ukuhlela, ukuhlela nokuhlanganisa imisebenzi yezokuthutha zomhlaba esifundazweni, ukulungiselela i-Provincial Land Transport Framework (PLTF), kanye nokuhlela phakathi kwezifundazwe nomasipala. Futhi, linomthwalo wemfanelo wemisebenzi ebhalwe ku-Sheduli 4 kuMthethosisekelo ngokuhlanganyela nezinga likahulumeni kazwelonke (ukuthutha komphakathi, imvelo, ukulawulwa kwezimoto zomgwaqo, kanye nokubhaliswa kwezimoto). Linomthwalo wemfanelo kuphela wemisebenzi ebhalwe ku-Sheduli 5, okuhlanganisa imigwaqo yesifundazwe nezokuthutha kanye nohlelo lwezokuthutha lwezifundazwe.

Omasipala banesibopho wemisebenzi ebhalwe ku-Hlobo B ye-Sheduli 4 no-5, okuhlanganisa ukuthutha komphakathi kwamaphoyisa, ukuhlela kwamaphoyisa, izikhumulo zezindiza zamaphoyisa, izikhangiso kanye nokuboniswa kwezikhangiso ezindaweni zomphakathi, kanye nokulawulwa kwezimoto zomgwaqo kanye nokupaka.

Isahluko 3 soMthethosisekelo sinikeza uhulumeni obambisanayo. Amazanga amathathu kahulumeni kufanele zibambisane ngokwethembana okuhle nangokwethembeka, phakathi kokunye ngokuhlela izenzo zabo nemithetho, futhi zigweme izingxabano lapho kungenzeka. Lokhu kudingeka futhi yi-Intergovernmental Relations Framework Act 13 ka-2005 (IGRFA), enikeza izivumelwano phakathi kwezinhlangano zikahulumeni kanye nokuxazulula izingxabano phakathi kwazo.

I-NLTA ibeka elithi lapho kunokugeleza kwezokuthutha ezibalulekile phakathi komasipala, njengaseGauteng, bangase basungule iforamu lapho omasipala behlangana khona ukuzodingida ezisemqoka ngokwemigomo ye-IGRFA noma isevisi yenhlangano ehlanganisa omasipala ukuze ihlinzeke ngezinsizakalo endaweni ethintekayo. I-Transport Authority for Gauteng (TAG) isungulwe yi-TAG Act njengokumiswa okuqondisayo nokulawulayo.

Ababambiqhaza kanye nabadlali-ndima ababalulekile kufanele bathintwe ekuthuthukiseni i-ITMP25. I-Promotion of Administrative Justice Act 3 ka-2000 (PAJA) ibeka ukuthi abantu omalungelo abo angathinteka kabucayi kufanele bathintwe lapho uhulumeni ethatha izinyathelo zokuqondisa, okuhlanganisa ukuhlela ezokuthutha, noma ngokwazisa nokuphendula noma ngezinkulumo zomphakathi.

UMthethosisekelo ne-NLTA ibeka ukuthi ngezimo ezithile, imisebenzi esezingeni likahulumeni kazwelonke inganikezwa ezifundazweni noma kumasipala, futhi imisebenzi esezingeni lezifundazwe inganikezwa kumasipala. I-NLTA inikeza ukunikezwa kwemisebenzi ethile, futhi iDokumenti KaHulumeni KaZwelonke Echaza Ngezinqubomgomo Emkhatheni Wezitimela (White Paper on National Rail Policy 2022) ibeka ukuthi umsebenzi wezezitimela zasemadolobheni ungase uphathwe kangcono ezingeni lendawo. IDokumenti KaHulumeni Echaza Ngezinqubomgomo Emkhatheni Wezitimela iphinde ibeke ukuthi izifundazwe kufanele zithathe umthwalo wemfanelo wezezitimela zesifunda. I-NDotT ithuthukisa isumgomo lokudluliselwa kweSibopho Semisebenzi sisuka ezingeni likazwelonke siya ezingeni lesifundanelendawo. Isifundazwe sizohlola ithuba lokuthutha imisebenzi efanele ye-commuter

rail njengoba isipiliyoni se-Gautrain sikhombisa ukuthi sikwazi ukuqhuba le misebenzi kahle nangempumelelo.

I-NDoT kufanele ihlele phakathi kwezifundazwe ngezindaba zezokuthutha futhi ihlele phakathi kwe-RSA nezinye izizwe. I-MINMEC yasungulwa njengesakhiwo sokuhlela phakathi koNgqongqoshe kanye ne-MECs yezifundazwe. I-Committee of Land Transport Officials (COLTO) yasungulwa njengesakhiwo sokuhlela phakathi kwe-NDoT kanye nezikhulu zezifundazwe. Kukhona nezinye izakhiwo zokuhlela kazwelonke ezifana ne-Presidential Climate Commission (PCC) kanye ne-National Planning Commission (NPC).

Esifundazweni, i-MINMEC isungulwe njengesakhiwo sokuhlela phakathi kwe-MEC kanye ne-MMCs (amalungu wekomidi le-mayoral) kumasipala, nezikhulu zeminyango ezihambisana nazo. Ezingeni lamaphoyisa, i-South African Local Government Association (SALGA) imele uhulumeni wendawo.

Ezingeni likamasipala, i-South African Local Government Association (SALGA) immelela uhulumeni wendawo.

I-Gauteng Department of Roads and Transport (GDRT) isungule i-Transport Technical Working Committee (TTWC) njengohlelo lokuhlela phakathi kweSikhungo nezinhlangano zomphakathi, enezinhlangano ezincane ezinhlanu ezibika kuyo. Isifundazwe kufanele sihlale ithuba lokusungula i-Public Transport Integration Committee (PTIC), futhi le komidi ibuye isungulwe futhi ivuselelwe.

Ababambiqhaza ababalulekile esigabeni sikahulumeni kazwelonke bahlanganisa uNgqongqoshe kanye ne-National Department of Transport (NDoT), i-National Treasury (NT), i-National Public Transport Regulator (NPTA), i-SA National Roads Agency (SANRAL), i-Passenger Rail Agency (PRASA), i-Transnet, i-Transport Economic Regulator (TER) esazoba khona, i-Airports Company of SA (ACSA), i-Cross-Border Road Transport Agency (CBRTA), i-Border Management Authority (BMA), i-Road Traffic Management Corporation (RTMC), kanye ne-Presidential Climate Commission (PCC).

Abahlanganyeli esigabeni sesifundazwe bahlanganisa uMEC kanye ne-Gauteng Department of Roads and Transport (GDRT), i-Transport Authority for Gauteng (TAG), i-Gautrain Management Agency (GMA), i-Gauteng Provincial Regulatory Entity (GPRE), i-Gauteng Department of Education, phakathi kwabanye.

Esigabeni samadolobha, kunezindawo ezintathu ezinkulu zomphakathi esifundazweni kanye nezindawo ezimbili ze-District Municipalities, ngayinye inezindawo ezintathu ze-Local Municipalities ngaphakathi kwezakhiwo zayo. I-NLTA inikeza ukusungulwa kwe-Intermodal Planning Committees kanye ne-Local Transport Advisory Boards ngamadolobha. Umsebenzi wokulawula ukuthutha komphakathi ungabelwa kumadolobha, okuzoba izikhungo zokulawula zomphakathi (MREs).

Abahlanganyeli esigabeni esizimele bahlanganisa izinhlelo ze-taxi ezincane, izinhlelo ze-taxi ezilinganisiwe, izinhlelo ze-e-hailing, kanye nabaphathi bezinsizakalo, izinhlelo zabaphathi bezimoto, izinhlelo zabaphathi bezithuthi, abahambi, umphakathi jikelele, izinyunyana, kanye neziqo zomphakathi ezizimele.

I-Gauteng Department of Roads and Transport (GDRT) ibalulekile ekuthuthukiseni ukuhamba nokufinyeleleka esifundazweni, futhi ibambisana nezinhlangano eziningi ukuze kuqinisekise ukuthuthuka okuqhubekayo kwezokuthutha.

## 15. Uxhaso Nohlelo Lokusingathwa Kwezimali

Uhlelo Loxhaso Nolwezezimali luyingxenye esemqoka yeNhlolo-mbono Yezokuthutha Okudidiyelwe kwaseGauteng (Gauteng's Integrated Transport Master Plan [ITMP]), okubalulekile ekuhlinzekeni amaphrojekthi asemqoka wengqalasizinda yezokuthutha ahamba phambili entuthukweni yesifundazwe.

Uhlelo Loxhaso Nolwezezimali luchaza indlela yesu lokufezekiswa komsebenzi ukuze kutholakale izidindo zoxhaso nezixazululo, luhlanganisa:

- Izibonelelo zikahulumeni kanye nezabelo-mali (isib., i-MTEF/iSabelo-mali);
- Usizo lwezezimali lukahulumeni kwezokuthuthwa komphakathi (PTOG);
- Ukubambisana Phakathi Kwezinhlangano Zikahulumeni Nezizimele (Public-Private Partnerships [PPPs]); kanye
- Neminikelo evela ezinhlanganweni zentuthuko njenge-Development Bank of Southern Africa (DBSA) kanye ne-Industrial Development Corporation (IDC).

Lolu hlelo luhlinzeka ngokuhlukaniswa kahle kwezinsiza kwezimali ukuze kube nezinqubomgomo eziphumelelayo zokuthuthukisa izinhlelo zezokuthutha, kuhola izimali ezivela koHulumeni kanye noHulumeni, kugcizelela umnotho okhiqizayo, ukuthuthukiswa okuhambisana nezezimali ezizoba nethonya elide, ikakhulukazi uma kuqapheleka isikhundla saKwaGauteng njengesikhungo somnotho saseNingizimu Afrika.

Impumelelo ye-ITMP25 incike ekusebenzelaneni phakathi kwabantu abavela kuzo zonke izigaba ezifana ne-GDRT, TAG, Transnet, kanye nemiphakathi efana ne-Johannesburg, Tshwane, Ekurhuleni, West Rand District, ne-Sedibeng. Umuntu ngamunye kulezi zibalo unezibopho ezithile kokulawula imali, ukuthola uxhaso lwezezimali, kanye nokuthuthukiswa kwezakhiwo zokuthutha ukuze kuhlangatshwane nezinhloso zohlelo lwezezokuthutha

Uhlelo lwezezimali oluphelele, oluhlanganisa i-Funding and Financial Plan, luqinisekisa ukuthi izinhlelo zokuthutha zisebenza kahle, zihambelana nezinhloso zokukhula komnotho, futhi zisebenzele izidingo zokuhamba kwezinhlangano zonke eziseGauteng

Uhulumeni ungumnikazi oyinhloko wezezimali zokuthuthukisa izakhiwo zezokuthutha, izabelomali zikahulumeni kazwelonke nezamazwe, okuhlinzeka ngezabelo eziningi zezimali. Isibonelo, uhulumeni waseGauteng unikezela cishe u-R2.5 bhiliyoni minyaka yonke emsebenzini obalulekile, njengohlelo lwe-Gautrain. Izindlela ezingeziwe zokuthola uxhaso zibandakanya uxhaso olunemigomo nemibandela (conditional grants) kanye nezizimele ezibandakanya emabhajethi emiphakathi. Iphiko lezokuthutha nezindlela zineqhaza elibalulekile, lihlanganiswa nezimali ezivela kubantu abakhethiweyo kanye nemishwalense yezezimali yezakhiwo zomgwaqo ezihambelana nohlelo lwe-Growing Gauteng Together 2030 (GGT2030).

Njengoba isidingo sezokuthutha eGauteng sikhula, kuvela isikhala esinzima phakathi kwezindleko ezidingekayo nezimali ezitholakalayo. Izinkinga ezisemqoka zifaka phakathi izindleko ezinkulu ezidingekayo kumaphrojekthi amakhulu, izindleko zokusebenza eziqhubekayo nokugcinwa, kanye nomthwalo wezezimali wokufaka ubuchwepheshe obuphambili. Izinqumo zesikhashana kanye nezikhala zemali zibonisa isidingo esiphuthumayo sokwenza uhlelo lwezezimali oluhlelekile ukuqinisekisa ukuthi i-ITMP25 ifezeka ngempumelelo. Ukuze kugcwaliswe isikhala semali esikhulayo, izindlela zokuthola izimali ezihlukile kumele zihlolwe, kubandakanywa amabhondi emiphakathi, izimali zemvelo, kanye nokuthola inani lentela, kanti kuqinisekiswa ukuhambisana nemithetho. Ukuvumelana

nemikhawulo yeTAG neGDRT kuzohlinzeka ngokuhambisana okuphumelelayo ekuthuthukiseni uhlelo lwezokuthutha oluhlakaniphile olukhuthaza ukukhula komnotho nokuthuthukiswa okusezingeni eliphezulu eGauteng.

Uhlaka oluphumelelayo lokuthola izimali luyadingeka ukuze kuxazululwe izidingo zokuthutha kwezakhiwo eGauteng. Izinketho zokuthola izimali ezingase zibe khona zihlanganisa:

- **Ukwabelwa Kwesabelo-mali:** Ukusebenzisa izikwama zezimali zikahulumeni kanye nezibonelelo ezinemigomo nemibandela.
- **Izinhlango ezixhasa kwezentuthuko (DFIs):** Ukuthola izimali-mboleko ezinhlangozweni ezifana ne-Development Bank of Southern Africa ne-African Development Bank (AfDB).
- **Izimali-mboleko ezivela ezinhlangozweni ezingefani Nokuxhaswa Ngokwezimali Kwamaphrojekthi:** Ukufinyelela ezikhwameni zezimali zoxhaso olukhulu zababoleki abahlukahlukene.
- **Uxhaso Lwemisebenzi Engenayo Imithelela Emibi Endaweni Yezemvelo:** Ukuheha abatshali-mali odabeni lwemisebenzi enemithelela emihle kusetshenziswa izimali ezibekelwe leyo misebenzi.
- **Isimiso Sokukhokha Komsebenzisi:** Ukuqalisa ukukhokhwa kwezimali kwezokuthutha zasemgwaqeni nezitimela ukuze kwesekwe izinsizakalo.

Kucatshangelwa ukuVumelanisa Imigomo Nesu Lokufezekiswa Komsebenzi nabanye abadlali-ndima Abasemqoka, abaxhumana nabadlali-ndima abakhulu, kuhlangozweni ne-Transnet, i-SANRAL, kanye nomasipala bendawo, kubalulekile ekubhekaneni nokushoda koxhaso nemisebenzi. Inhlangozweni ngayinye igxile ezibophweni ezithile kanye namasu okufezekiswa koxhaso ukuze kuthuthukiswe ingqalasizinda iyonke yemizila yezokuthutha eGauteng.

Ekuphetheni, uHlelo Loxhaso Nolwezezimali lwe-GDRT kubaluleke kakhulu empumelelweni yenhloso-mbono Yeminyaka Engamashumi Amabili Nahlanu Yezokuthutha Okudidiyelwe (Twenty-five Year Integrated Transport Master Plan). Ngokusebenzisa izindlela zoxhaso ezingcono kakhulu kunezakuqala zimataniswa nezindlela ezijwayelekile, i-GDRT ingavumelanisa imithombo yayo yezezimali nemigomo ebanzi yezezimali neyehlalo, kanye nezinjongo zendawo yezemvelo. Ukusebenzisana nababambiqhaza abasemqoka kanye nokuqalwa kokusetshenziswa kwezindlela zokwenza kuthathelwa ezibonelweni ezinhle zamazwe ngamazwe kuzokuthuthukisa ingqalasizinda yezokuthutha yaseGauteng, kweseke intuthuko yezezimali kanye nesimo esisimeme. Njengoba izidingo zokuxhaswa kwengqalasizinda zanda, kubalulekile ukuqala ukusebenzisa izindlela ezihlukahlukene zamasu okufezekisa umsebenzi ezixazulula izinselele zoxhaso futhi zikhuthaze ukuphelelisa okungcono kwemisebenzi, kuqinisekise izinga lempilo elingcono kuzakhamizi.

## 16. Izifinyezo Zamagama

AI	Artificial Intelligence
GFIP	Gauteng Freeway Improvement Project
GP	Gauteng Province
IPTN	Integrated Public Transport Network
MTEF	Medium Term Expenditure Framework
NDoT	National Department of Transport
NMT	Non-motorised Transport
NT	National Treasury
SANRAL	South African National Roads Agency
TER	Transport Economic Regulator





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