

Data, Transportation, and Urban Planning in Egypt

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Background Study

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TABLE OF CONTENTS

1. OBJECTIVE
2. TRANSPORTATION IN CAIRO: COMMON THEMES AND TENDENCIES
3. NON-TRADITIONAL TRANSPORTATION SERVICES
4. TRIP-PLANNING PHONE APPLICATIONS
5. DEVELOPMENTAL INITIATIVES
6. DATA OPENNESS: WHAT DOES IT TELL US?
7. BIBLIOGRAPHY

The following background study provides an overview of non-traditional transportation services, trip planning applications, and developmental initiatives in Egypt. The impetus behind putting these three categories in conversation with one another is to illuminate the various ways in which public and private entities are working to either fix or mitigate the effects of Egypt's inconvenient, environmentally hazardous, and unreliable public transportation services using data and innovative technology. Our aim is to research temporary survival strategies, while investigating long-term solutions that often go, beyond transportation, into questions of urban planning.

The question of accessibility in terms of the improvement of transportation data and services is an important one. In fact, the lack of data availability in the transportation sector in Egypt is arguably one of its most debilitating facets. Whether data is not being systematically collected, or whether it is not being made accessible or available to the public, the issue remains that sustainable public and private transportation networks, face challenges due to the lack of data availability and the lack of active effort towards systematic data collection, which are both prerequisites for evidence-based planning.

Many of the following initiatives, projects, and companies provide viable alternatives to the amount of private cars on the road vis a vis carpooling, bus pooling, and trip planning. However, such initiatives target private car owners – a mere 15 percent of Egypt's population. The broader questions of congestion and safety remain unanswered by the public transportation policy and services, and the few initiatives contributed by private sector players and civil society.

Moreover, in light of the 2015 United Nation's Sustainable Development Goals (SDGs) which outlined Target 11.2 as the goal to “provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by ex-

panding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons” by 2030,¹ the last section of this study discusses the role of data – and open data – in questions of development in transportation initiatives across the country.

¹“Sustainable Development Goals: Knowledge Platform”, United Nations, accessed August 23, 2016. <https://sustainabledevelopment.un.org/?menu=1300>

2.1 Navigating Cairo: Congestion, road accidents and increasing prices

In the following section, we discuss major themes and debates in urban planning and development work in Cairo pertaining to Egypt's transportation sector. Three problems are the highlights of such debates: Congestion, and related to it is environmental degradation, road safety and the broader economic crisis that followed the pound devaluation and the fuel subsidies lifting.

The Cost of Congestion

According to the Cairo Traffic Congestion Study that was carried out by the World Bank in 2014 which aimed at addressing the issue of congestion in Cairo through conducting a macro-level investigation. Funded by the World Bank and conducted upon the request of the Egyptian government, the study found that fifteen percent of Egyptians use private cars, which constitute 55 percent of the traffic share in the Greater Cairo Metropolitan Area.² During peak hours, "average speeds on sampled surface streets are between 6 to 25 kilometers per hour. Also during peak periods, average speeds on the sampled major corridors, all of which are within the Ring Road, are between 20 to 45 kilometers per hour."³ The World Bank reveals that traffic in Cairo costs the state LE47 billion, expected to reach LE105 billion by 2030. The total costs of congestion were projected at 3.6 percent of Egypt's total GDP.⁴

Egypt is ranked as "one of the 11 fastest growing greenhouse gas (GHG) emitting countries in the world" where 70 percent GHG emissions are from electricity and transportation.⁵ In 2010, 24 percent of GHG emissions were estimated to be a result of transportation alone.

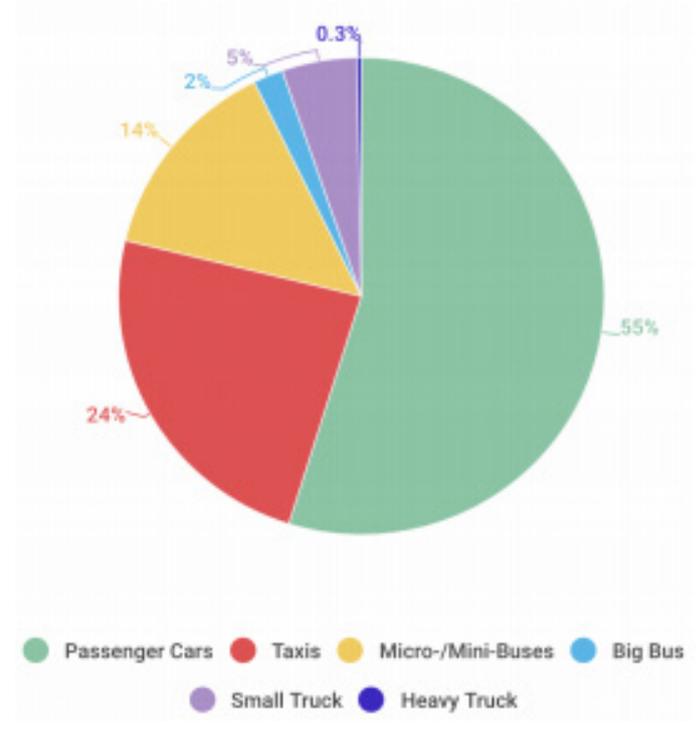


Figure 1
Share of Street Transportation in Cairo
 Data Source: "Cairo Traffic Congestion Study | Executive Note",
 World Bank (2014)

²"Cairo Traffic Congestion Study | Executive Note," World Bank, May 2014, accessed August 9, 2016. <http://www.worldbank.org/content/dam/Worldbank/TWB-Executive-Note-Eng.pdf>

³ Ibid.

⁴ Ibid.

⁵ "Egypt", World Bank Climate Investment Funds, accessed August 24, 2016.

COST COMPONENT	DESCRIPTION	VALUE	ANNUAL COST (LE)
Delay	Cost related to travelers' time wasted in slow moving traffic.	2.2B hours	14.7 billion
Reliability	Time wasted due to changed expectation regarding average travel time (for example, to reach an important meeting which requires 20 minutes average travel time, one travels 60 minutes before the meeting time to make sure he reaches that meeting on time).	1.4B hours	9.2 billion
Fuel	Cost of excess fuel wasted when cars are not moving, or moving slowly due to congestion.	1.9B liters	6.6 billion
CO2	Economic cost of carbon dioxide emissions and their effect on climate change.	7.1B kilograms	0.4 billion
		Subtotal:	30.9 billion

Figure 2
The Cost of Congestion

Data Source: Wey, Tiffany, "Transport: Operating Territories", Cairo Observer, February 6, 2012, accessed August 25, 2016

Road Accidents: A Leading Killer

According to a Central Agency for Public Mobilization and Statistics (CAPMAS) report issued on August 22, 2016, "Road accidents in Egypt have resulted in the death and injury of 25,000 people in 2015."⁶ 36.8 percent of these accidents are caused by private cars, 27.8 percent by trucks, and 18.9 percent by taxis. The Nada Foundation for Safer Egyptian Roads additionally reported that road accidents are the leading cause of death for 15-19 year-olds, and the second leading cause of death for 5-14 year-olds.⁷ Although a 2014 report by the Ministries of Interior and Transportation "claimed that the majority of Egypt's road and railway accidents are caused by human error",⁸ backed by the recent CAPMAS report that attributes 64 percent of accidents in 2015 to faulty driving and

inappropriate road crossing,⁹ the head of the Nada Foundation for Safer Egyptian Roads asserted that this is misleading, since people often cross dangerous roads due to lacking infrastructure such as crossing bridges on wide and notoriously dangerous passes.¹⁰

Removal of Fuel Subsidies and Devaluation

Economies in the Middle East and North Africa have historically been among the highest subsidizers of food and fuel commodities, allocating, what critics say are, an unsustainable proportion of government resources to inefficient and ineffective social safety nets for their populations.¹¹ Egypt in particular has come under increasing pressure to reduce its subsidies in the context of significant macro-economic challenges exacerbated since the 2011 uprising, and

⁶ "Egypt's Economic Outlook - Spring 2016", World Bank, accessed November 30, 2016, <http://www.worldbank.org/en/country/egypt/publication/economic-outlook-spring-2016>.

⁷ "NGO: Road accidents are leading cause of death for 15-19 year olds in Egypt", Mada Masr, May 6, 2015, accessed August 23, 2016. <http://www.madamasr.com/news/ngo-road-accidents-are-leading-cause-death-15-19-year-olds-egypt>

⁸ Ibid.

⁹ "Over 25,000 deaths, injuries resulting from road accidents in 2015: CAPMAS", Mada Masr, August 22, 2016, accessed August 23, 2016. <http://www.madamasr.com/news/over-25000-deaths-injuries-resulting-road-accidents-2015-capmas>

¹⁰ Ibid.

¹¹ Abdullah Zaid, Hassan Sherry, Mahinour El-Badrawi, and Joshua Haber, "Arab Uprisings & Social Justice: Implications of IMF Subsidy Reform Policies", ECESR, February 2014, accessed November 25, 2016, <http://ecesr.org/en/wp-content/uploads/2015/01/Policy-Paper-IMF-Subsidy-Recommendations-to-Arab-Countries-English.pdf>

a newly-signed \$12 billion loan from the International Monetary Fund set to support the revamping of the country's ailing economy.

Traditionally dependent on its tourism industry, remittances from expatriates, and foreign direct investment, Egypt has seen a significant decrease in foreign currency reserves in recent years and a subsequent drop in the market value of its currency, with the parallel market rate valuing the American dollar at LE16.05 on October 25,¹² compared to the official rate of LE8.8773.¹³ Between 2004 and 2011, with a largely growing economy, Egypt's Central Bank (CBE) operated a managed float, reflecting market dynamics and allowing for flexible yet stable adjustments in the value of its currency.¹⁴ In December 2012, a transition to a fixed exchange rate regime was made, instigated in response to the aforementioned economic challenges post-2011. Since then, however, faced with severe shortages in foreign currency, rising inflation, and decreasing export rates, the CBE has been forced to take steps to more accurately align the

pound with its market value, allowing the currency to depreciate by roughly 14 percent to the dollar in 2015, before deciding to move to a free float of the currency in November 2016 after mounting pressure.

The decision to float—resulting in a 57 percent decrease in the value of the pound overnight—was precipitated by a set of macro-economic challenges, that included projected budget deficits of 11.3 percent¹⁵ of GDP for FY2016, and unemployment rates reaching 12.6 percent,¹⁶ inflation rates reaching 15.7 percent, and foreign currency reserves down from \$36 billion in 2011 to \$19.04 billion USD, all in October of 2016. In theory, the devaluation would address these issues by attracting new foreign direct and indirect investment, curbing the growth of a thriving parallel market, and securing the \$12 billion loan from the IMF.

**USD PARALLEL MARKET RATE —
ENTERPRISE — NOVEMBER 2014 -
OCTOBER 2015**



Figure 3

Data Source: Enterprise (2016), "USD parallel market rate, November 2014 – October 2015"

**WORLD BANK:
KM OF METRO/MILLION POPULATION**

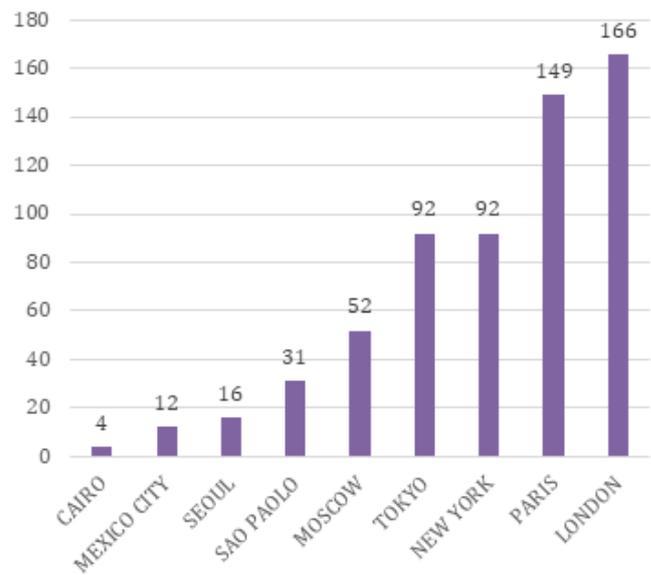


Figure 4

Data Source: Enterprise (2016), "USD parallel market rate, November 2014 – October 2015"

¹² Enterprise, e-mail message to Nada Sallam, October 25, 2016.

¹³ "US Dollar (USD) to Egyptian Pound (EGP) exchange rate history", Exchange Rates, accessed November 25, 2016, <http://www.exchangerates.org.uk/USD-EGP-exchange-rate-history.html>.

¹⁴ Deya Abaza, "Economists welcome Egyptian Pound devaluation, flexible exchange rate", Al Ahram Online, March 14, 2016, accessed November 26, 2016, <http://english.ahram.org.eg/NewsContent/3/12/190985/Business/Economy/Economists-welcome-Egyptian-Pound-devaluation,-fle.aspx>

¹⁵ "Egypt's Economic Outlook - Spring 2016", World Bank, accessed November 30, 2016, <http://www.worldbank.org/en/country/egypt/publication/economic-outlook-spring-2016>.

¹⁶ "Inflation Rates", Central Bank of Egypt, accessed November 30, 2016, <http://www.cbe.org.eg/en/EconomicResearch/Statistics/Pages/Inflation.aspx>.

Simultaneously, after growing at an annual rate of 26 percent between 2002 and 2013,¹⁷ fuel subsidies were significantly decreased over the last three years, starting from a drop from LE102 billion in 2014/15¹⁸ to LE61 billion in 2015/2016. In 2016/17,¹⁹ having set a budget of LE35 billion for fuel subsidies²⁰ (down roughly 43 percent from the previous year), accounting for an initial Brent^{21,22} price of \$40 a barrel, the Egyptian government was faced with a number of problems. Primarily, the price of Brent increased to \$52.1 a barrel until an OPEC output deal was made, settling at roughly \$50.47 per barrel.²³ Simultaneously, with the pound's recent devaluation, the cost of maintaining subsidies has run double the cost initially budgeted in real terms. With Egypt importing roughly 500,000 tons of diesel, 300,000 tons of butane, 150,000 tons of gasoline, as well as 500,000 tons of fuel oil and other shipments of liquefied natural gas, according to the Egyptian General Petroleum Corporation (EGPC) at the beginning of 2016, subsidies have continued to exacerbate fiscal deficits.²⁴

While subsidies have been shown to be regressive, benefiting the rich at a disproportionate rate, and taking a significant toll on an already weakening economy, reductions in the past have incited criticism, as a result of the government's perceived failure to set up safety nets to cushion the blow on the most socio-economically disadvantaged segments of society. Indeed, collectively, with inflation going up, the value of the pound going down, and subsidies be-

ing reduced, the population has seen its purchasing power slashed, itself affecting domestic consumption and economic growth.

The impact of this on transportation can be seen both on a direct and indirect level. With fuel prices increasing by as much as 45.5 percent for natural gas (on which most taxis depend), 46.8 percent for Octane 80, 34.6 percent for Octane 92, and 30.5 percent for diesel, the cost of mobility for citizens, particularly those from the poorest segments of society, as well as of goods, has been greatly affected.²⁵

Transport mode choice globally is driven by a number of factors ranging from price to speed, safety to accessibility, and more.²⁶ For the majority of Egypt's citizens, however, faced with very few choices, mode flexibility is a luxury few can afford, and any increases in fuel price tend to have a direct and unavoidable effect on families' overall consumption patterns. With subsidies decreasing, expenditure on transport begins to constitute a larger share of household budgets, and leaves families with less money to spend on other essential goods. The lifting of fuel subsidies has also evidently repercussions on the general price of goods.

Shortly after the pound went to float, Egypt's government released a price list²⁷ detailing the new tickets costs for public transport, cognizant of the roughly 13 million commuters in Greater Cairo who

¹⁷ "Energy Subsidy Country Update", International Institute for Sustainable Development, August 2014, accessed November 28, 2016, https://www.iisd.org/GSI/sites/default/files/ffs_egypt_update_august_2014.pdf.

¹⁸ Mohamed Adel, "Fuel subsidy bill for 2014/2015 to exceed budget: Former EGPC VP", Daily News Egypt, July 1, 2014, accessed December 1, 2016, <http://www.dailynewsegypt.com/2014/07/01/fuel-subsidy-bill-20142015-exceed-budget-former-egpc-vp/>

¹⁹ Reuters, "Egypt to cut fuel subsidies as govt seeks to reduce deficit", Al Ahram Online, April 10, 2016, accessed November 26, 2016, <http://english.ahram.org.eg/NewsContent/3/12/199260/Business/Economy/Egypt-to-cut-fuel-subsidies-as-govt-seeks-to-reduc.aspx>

²⁰ Mohamed Adel, "Egypt hesitates in cutting fuel subsidies", Daily News Egypt, October 12, 2016, accessed November 29, 2016, <http://www.dailynewsegypt.com/2016/10/12/egypt-hesitates-cutting-fuel-subsidies/>.

²¹ Brent Crude is often used as a benchmark price for oil trade worldwide.

²² Daniela Pylypczak-Wasylyszyn, "WTI vs. Brent Crude Oil: What is the Difference?", Commodity HQ, June 24, 2015, accessed November 30, 2016, <http://commodityhq.com/education/crude-oil-guide-brent-vs-wti-whats-the-difference/>.

²³ Christopher Johnson, "Oil prices hold gains after surge on OPEC output deal", Reuters, December 1, 2016, accessed December 1, 2016, <http://www.reuters.com/article/us-global-oil-idUSKBN13Q35H>.

²⁴ Mohamed Adel, "CBE provides \$400m to import fuel in Q1 of 2016", Daily News Egypt, February 1, 2016, accessed December 1, 2016, <http://www.dailynewsegypt.com/2016/02/01/cbe-provides-400m-to-import-fuel-in-q1-of-2016/>.

²⁵ "Egypt to raise fuel prices by up to 47 percent at midnight", Mada Masr, November 3, 2016, accessed December 1, 2016, <http://www.madamasr.com/en/2016/11/03/news/economy/egypt-to-raise-fuel-prices-by-up-to-47-percent-at-midnight/>

²⁶ Ali Soliman Huzayyin, "Mode captivity and mode choice in developing countries; with reference to Greater Cairo," accessed November 2, 2016, http://www.euromedina.org/bibliotheque_fichiers/espace_organisation/Skhirat_enquete_pays_Egypt1.pdf

²⁷ "تأثير زيادة أسعار الوقود على تكاليف النقل"، الجهاز المركزي لتعبئة العامة والاحياء، ٥ نوفمبر ٢٠١٦

rely primarily on the metro, public buses, and microbuses.²⁸

Yet, with a substantial number of citizens depending on unregulated transport mode, and an inability on the part of the government to completely curb prices hikes, millions of people each day are left at the mercy of the market.

From the perspective of the operators of informal means of transportation like minibuses, the increases in price set by them in the wake of the devaluation and fuel subsidy cuts represent a fair response to the increased costs incurred on their part both on fuel, and on other essential goods. Similar to the government's reduction of subsidies as a means by which to decrease fiscal deficits, informal microbus drivers attempt to compensate for significant reductions in their own purchasing power by sharing the costs with the consumers.

2. 2. Informality and problems within the transportation sector in Cairo

Analyses of Egypt's formal public transport infrastructure have highlighted significant problems both in terms of reach and capacity. A World Bank study conducted in 2014 identified only 4 KM of metro line in Cairo per 1 million inhabitants, compared to 166 KM in London and 31 in Sao Paulo.²⁹ Similarly, with regards to metro use, the study found that per day, ridership was at roughly 37 riders per KM, compared to only 7 in London. With regards to buses, it estimated the number of full-sized buses at 231 per million inhabitants in Cairo, compared to 753 in London, and 1020 in Sao Paulo.

The Cairo Transport Authority (CTA) oversees mass transit in Cairo and is the largest operator in Egypt. It is responsible for the buses, the metro, ferries and

river buses. Its subsidiary, the Greater Cairo Bus Company (GCBC) operates buses and minibuses, which are often operated by contracted private companies under the auspices of the CTA.

The informal transport network in Egypt has frequently been cited as among the largest in the region, with as many as 80,000 non-licensed/unregulated minibuses in the Greater Cairo Area, particularly in places without official planning, including informal and desert areas.³⁰

This presents a particular set of difficulties when trying to quantitatively analyze or even decisively map traffic information in the city and beyond. Since most information compiled by international financial institutions focus on formal transportation, there is a massive deficit of data currently available that takes informal transportation into account.

For example, minibuses account for "over half the transit needs of Cairo's 18 million people, according to the Japan International Cooperation Agency".³¹ However, due to the complex positioning of minibuses in an in-between space between formality and informality, collecting data on their numbers, routes and ridership rates often proves difficult. That is, even though the majority of minibuses are licensed to operate within specified zones, they are considered informal with regards to their ability to sometimes operate outside of their designated areas, yet do so cautiously due to policing and enforcement by local authorities. More so, even when operating within their designated zones, the choice of routes to take within their zones, are dictated independently by operators. Their informality is also seen in their ability to pick-up and drop-off passengers at any point on the road, stopping on-demand, without the presence of official stops to regulate their movements. Furthermore, microbus operators enjoy some freedom

²⁸ Linda Poon, "Young Egyptians Are Leading Cairo's Transit Mapping Revolution" City Lab, August 18, 2016, accessed December 1, 2016, <http://www.citylab.com/commute/2016/08/a-group-of-young-egyptians-is-leading-cairos-transit-mapping-revolution-public-transport/495452/>.

²⁹ "Benchmarking Cairo's Urban Transport System", World Bank, 2014, accessed December 1, 2016. <http://www.worldbank.org/content/dam/Worldbank/document/Benchmarking-Cairo-Urban-Transport-System.pdf>

³⁰ Linda Poon, "Young Egyptians Are Leading Cairo's Transit Mapping Revolution" City Lab, August 18, 2016, accessed December 1, 2016, <http://www.citylab.com/commute/2016/08/a-group-of-young-egyptians-is-leading-cairos-transit-mapping-revolution-public-transport/495452/>.

³¹ Jahd Khalil, "Mapping Cairo's transport system to help commuters navigate chaos", May 11, 2016, accessed August 28, 2016. <http://www.thenational.ae/world/middle-east/mapping-cairos-transport-system-to-help-commuters-navigate-chaos>

in setting their fares, although it is important not to view their fare-setting practices as entirely independent from any regulatory forces, where although they may fluctuate, fare-setting still occurs within limited boundaries dictated by the fares being used by other microbus operators and other formal public transport modes. Therefore, it remains difficult to collect data on microbus networks, pinpointing their routes and timetables.³² Even basic statistics regarding the sheer number of minibuses on the road are speculative at best: the last time the Egyptian government issued microbus licenses was in 1999. Then, there were 20,000 on the road. Now, researchers estimate that “there could be as many as 80,000”.³³

Another form of informal transportation is the tuk tuk, which is able to access roads that are too narrow for cars, buses, minibuses, and taxis to reach. The tuktuk is typically used for navigation within neighborhoods as a faster way of getting around, compared to walking or using a car. Although they are typically conceived as operating within informal residential areas or particularly overcrowded areas, their presence has visibly spread to the majority of residential areas inside and outside of Cairo. Tuktuks also sometimes venture outside of neighborhoods and freely traverse main roads and highways. Like the microbus, tuk tuks operate in a grey area regarding legality. A 2008 law allowed for licensing and registration requirements, but they remain illegal in Cairo (and only 6,000 are allowed to be registered in Giza).³⁴ However, one study estimates as many as 7 million tuk tuks in Egypt.³⁵

Though tuk tuks and minibuses sometimes lack proper licensing, their existence point to problems in the contiguity of formal urban transport—no feeder system exists to connect bus lines to metro stations, for example, and many formal services do not extend to unplanned, peri-urban, and desert areas. Figure 2 categorizes modes of transportation by geographical areas. The table illustrates both the lack of formal services extending to unplanned, peri-urban, and

desert areas, as well as the resulting proliferation in informal and private car use, which serve as substitutes and gap-fillers in the absence of viable public transportation options.

³² Jahd Khalil, “Mapping Cairo’s transport system to help commuters navigate chaos”, May 11, 2016, accessed August 28, 2016. <http://www.thenational.ae/world/middle-east/mapping-cairos-transport-system-to-help-commuters-navigate-chaos>

³³ Ibid.

³⁴ Matt Bradley, “The tuk-tuk: Egyptian gem or urban blight?”, November 14, 2010, accessed August 28, 2016. <http://www.thenational.ae/news/world/the-tuk-tuk-egyptian-gem-or-urban-blight>

³⁵ Menna Alaa El-Din, “Cairo’s tuk-tuk drivers defiant despite ban”, September 12, 2015, accessed August 28, 2016. <http://english.ahram.org/NewsContent/1/151/139723/Egypt/Features/Cairos-tuktuk-drivers-defiant-despite-ban.aspx>

FIGURE 5: Operating Territories	PLANNED	UNPLANNED	PERI-URBAN	DESERT
TUK TUK		X		X
TAXI		X	X	
PRIVATE CAR		X	X	
MICROBUS				X
CTA BUS		X		X
METRO		X	X	X
TRAIN		X	X	X

Figure 5

Data Source: Wey, Tiffany, "Transport: Operating Territories," *Cairo Observer*, February 6, 2012, accessed August 25, 2016

Ride-Sharing Initiatives

Ride-sharing is becoming a growing trend around the world. Uber (based in San Francisco) and Careem (based in Dubai) are Egypt's two most popular private car services. David Plouffe, Uber's chief strategist and senior advisor, has asserted that drivers on these platforms cannot be counted as regular taxi drivers, because driving on these platforms is typically performed part-time as opposed to being a committed career choice.³⁶ Other initiatives such as "Easy Taxi" have followed suit. Using an international booking mobile application, the Egyptian company aims to include white taxis in the digital world of ride-sharing by connecting drivers and users through a digital platform, allowing them to compete in the quickly digitizing market. Taxis can be ordered to a specified location and paid for by cash.

The entrance of Uber and Careem into the market, however, has not been without controversy. Taxi drivers have staged a few protests against what they perceive to be a sidestepping of appropriate licensing (including expenses), official fees, and steep union dues.³⁷ As Uber and Careem grow in popularity, taxi drivers claim their livelihoods are threatened by encroaching competition.

The tension between taxi and private car drivers exemplifies a long-standing problem concerning the safety and unreliability of traditional forms of transportation (buses and taxis) in Egypt. For example, "several commuters have expressed their preference for these app-based cab services. According to local reviews, these services are more convenient, offer reliable fares calculated by applications, don't require haggling over prices, generally present few-

er incidents of sexual harassment and feature fewer cigarette-smoking drivers."³⁸

Public Boats & Nile Taxi

One way to escape street congestion along the Corniche is to utilize boats along the Nile, which have become increasingly popular in recent years. The public boat service costs LE2, traveling through downtown to the east of the Nile to Zamalek, and Imbaba to the North-Western banks of the river.³⁹ Due to shortages in investment funds and uncoordinated planning efforts, Nile boats as public transport modes have been under-utilized for years. Renewed interest however has shown boats resuming their inner-city trips in 2014, after seven years of suspension, with plans to open additional docks throughout the city.⁴⁰

³⁶ Amira Salah-Ahmed, "Where does Uber see itself in 5 years?", Mada Masr, March 9, 2016, accessed August 10, 2016. <http://www.madammasr.com/sections/economy/where-does-uber-see-itself-5-years>

³⁷ "PM forms Cabinet committee to resolve taxi-Uber conflict", Mada Masr, March 9, 2016, accessed August 10, 2016. <http://www.madammasr.com/news/pm-forms-cabinet-committee-resolve-taxi-uber-conflict>

³⁸ "Taxi drivers protest against Uber, other app-based car services", Mada Masr, February 5, 2016, accessed August 10, 2016. <http://www.madammasr.com/sections/politics/taxi-drivers-protest-against-uber-other-app-based-car-services>

³⁹ Colette Ghunim, "Nile Taxi: Your Fun Alternative to Cairo's Traffic Jams", Egyptian Streets, October 20, 2015, accessed August 15, 2016. <http://egyptianstreets.com/2015/10/20/nile-taxi-commuting-across-cairo-in-speed-and-style/>

⁴⁰ "Nile buses return in force to Cairo", Ahram Online, April 15, 2014, accessed August 25, 2016. <http://english.ahram.org/NewsContent/3/12/99121/Business/Economy/Nile-buses-return-in-force-to-Cairo-.aspx>

Private companies have also started lobbying for their share in the lucrative Nile transport business. Launched in 2010 as a company, the Nile Taxi,, costs LE15 from Dokki (east of the Nile) to Zamalek (west of the Nile) and LE35 from Maadi (South of the Nile) to Zamalek (North of the Nile) with a total trip time of 22 minutes.⁴¹ Each taxi carries 15 passengers, and as with minibuses, the boats wait until they are full before departing – though they do still rely on a set timetable. On their website (NileTaxi.com), they include an interactive map of the six zones the taxis cover, the schedule, and the pricing based on departure and arrival destination. They also indicate that a mobile app with such information is forthcoming.

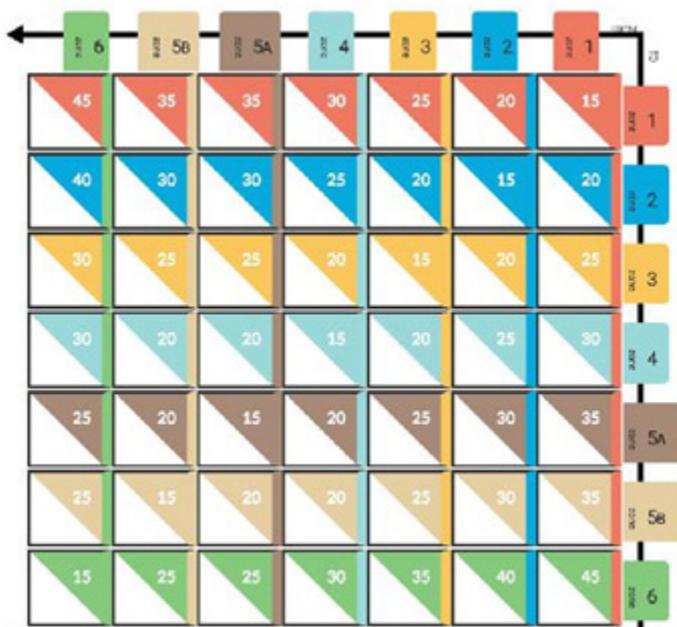


Figure 6
Nile Taxi Pricing Table (niletaxi.com)

Due to popular demand, Nile Taxi has plans to add 15 more taxis to their fleet, each carrying 40 riders. Additionally, they hope to “deploy larger boats, each

for at most 250 passengers, and travel to other governorates besides Cairo”.⁴² On their website, Nile Taxi states, “We Serve Cairo Citizens with an alternative towards environmentally conscious transportation and a solution for traffic congestion.” The explicit connection between environmental issues and traffic congestion renders visible the dire need for urban transportation reform.

While initiatives like Nile Taxi are indeed convenient, they are a far cry from universally affordable and accessible in a country where the minimum wage is a mere LE1200 per month.⁴³ Still, the increased popularity of both public and private boats emphasizes the growing inconvenience of transportation on the ground for all.

En2ly

After realizing the lack of efficient use of freight trucks in Cairo, which often transport goods in one direction and return with entirely empty trunks, this application connects “shippers in need of quality transportation service to carriers looking to increase their truck utilization at competitive rates.”⁴⁴

PieRide

A ride-sharing application, PieRide is a subscription-based car service that allows for daily round trips with other riders with similar routes. Additional preferences can be specified, such as the desire to be paired with a non-smoker, or someone of the same gender.⁴⁵

Bus Pooling

Bus Pooling, in an effort to limit traffic congestion, offers a periodic subscription for commuters who are assigned a bus based on home and work location.⁴⁶ Prices range from LE800– LE950 per month.

⁴¹ Ibid.

⁴² Ahmed Shafiq, “Feature: Nile Taxi, new tool to ease Cairo’s traffic jam”, New China, March 23, 2016, accessed August 15, 2016.

⁴³ “Egypt Minimum Monthly Wages 2012-2016”, Trading Economics, accessed August 15, 2016. <http://www.tradingeconomics.com/egypt/minimum-wages>

⁴⁴ “En2ly: Who we are?”, The American University in Cairo, accessed August 18, 2016. <http://schools.aucegypt.edu/business/aucvlab/pages/startup.aspx?eid=14>

⁴⁵ “How It Works”, PieRide, accessed August 18, 2016. <http://www.pieride.com/HowItWorks.aspx>

⁴⁶ “About Us”, Bus Pooling, accessed August 18, 2016. <http://www.bus-pooling.com/index.php?r=site/page&view=about>

Over the past few years, an increasing number of trip-planning digital applications have been released into global, regional and local markets, with people and businesses aiming to find new ways to combat urban congestion problems, while capitalizing on the impetus of advancements in digital communication. Although these digital applications provide useful and timely information for trip planning, ultimately saving commuters the time, money and energy otherwise spent in longer commutes, it is also pertinent to note the very palpable reality of the digital divide that characterizes these modes of information-sharing. That is, individuals from across the socio-economic spectrum do not enjoy equal access to, nor derive the same benefits from the emerging information society. This kind of inaccessibility has great implications on social development, in this case particularly in terms of mobility, as individuals' ability to move through the city becomes hampered by their disadvantageous position to accessing digital applications. That being said, the below section demonstrates some of the digital applications recently launched in Egypt, which have garnered significant following over the years.

Bey2ollak

Launched in 2010, Bey2ollak is a mobile application that uses crowd-sourced data to provide users with information about traffic congestion, offering alternative routes.⁴⁷ Additionally, in an attempt to re-envision what road safety may mean in post-2011 Egypt, features include statuses that indicate protest zones, nearest gas stations in the event of fuel shortages, and information about nearest hospitals.⁴⁸

Raye7

In an attempt to minimize traffic congestion and fuel consumption, Raye7, a carpooling application, con-

nects colleagues and encourages them to share their commute (for financial incentive) as an alternative to the plethora of single-person cars driving in the same direction to the same office.⁴⁹ A study conducted by Raye7 found that 70 percent of private cars on the road are occupied by one or two people (including a driver).⁵⁰ As such, Raye7 began contracting with companies in Smart Village to encourage the use of its applications, with plans to expand to other popular destinations in Cairo, Alexandria, and beyond, including private universities.

Rakna

Described as the "Uber for valets", Rakna is the first valet-on-demand application service in Egypt. Based on a specified location, the user is paired with a Rakna valet whose information (including his picture) is visible in the application. As a security precaution, the user is given a security number that the valet must recite to the driver before handover.⁵¹

Arkab Eh

Operating in both English and Arabic, Arkab Eh is a phone application dedicated to mapping the fastest routes using public transportation, from a specified location to any destination. It is functional not only in Cairo, but in Sharm El-Sheikh and Hurghada as well.⁵²

Wasalny

Wasalny, a multi-country platform used mostly in Nigeria, Egypt and Kuwait, is an application that provides users with real-time traffic updates via crowd-sourcing. To motivate community members to contribute to the updates, it rewards drivers and users with points and prizes.⁵³

⁴⁷ "Bey2ollak; 'We empower people to beat traffic together': In a nutshell", Bey2ollak, accessed August 9, 2016. <http://desktop.bey2ollak.com/about-bey2ollak/>

⁴⁸ Hannah Seligson, "Arab Spring, Start-Up Summer?", The New York Times, July 16, 2011, accessed August 9, 2016. http://www.nytimes.com/2011/07/17/business/global/egypts-entrepreneurs-look-beyond-the-revolution.html?pagewanted=2&_r=3&ref=egypt

⁴⁹ Mohamed Alaa El-Din, "Carpooling app Raye7 looks to expansion plans as interest grows", Daily News Egypt, March 23, 2016, accessed August 10, 2016. <http://www.dailynewsegypt.com/2016/03/23/carpooling-app-raye7-looks-expansion-plans-interest-grows/>

⁵⁰ Ibid.

⁵¹ "Rakna: The Uber of parking is almost here", CairoScene, February 2, 2016, accessed August 18, 2016. <http://www.cairoscene.com/Geek/Rakna-The-Uber-of-Parking-Is-Almost-Here>

⁵² "الركابية", Arkab Eh, accessed August 18, 2016. <http://arkabeh.com/mobile/>

⁵³ "Wasalny Traffic", Google Play, accessed August 18, 2016. <https://play.google.com/store/apps/details?id=wasalny.app&hl=en>

Winners of the 2013 Cairo Transport App Challenge (Cairo TApp)

Sponsored by the World Bank, Cairo TApp included 23 teams in a competition to “develop the best technological solution to one of the many problems associated with navigating Cairo’s notorious congestion.”⁵⁴ This initiative was successful in gaging the support of government agencies, as it was organized in collaboration “between the World Bank, the Egyptian Ministry of Communications and Information Technology, the Egyptian Ministry of Transport, and Egypt’s active technology community.”⁵⁵ Five prizes were awarded at the February 2013 ceremony, valued at more than \$6500.⁵⁶

Beliaa (First Place)

To remedy the inconvenience faced when a car breaks down at the side of a (sometimes deserted) road, this phone application “streamlines connections between car owners, after-sales service centres, towing centres for maintenance, scheduling services, and emergency road assistant using location-based services.”⁵⁷ For non-emergency situations, the Beliaa also helps the user find where they parked their car as well as places to go for check-ups and high-quality maintenance services.

Emokhalfa (Second Place)

This phone application seeks to enhance driving conduct and create safer roads by crowdsourcing traffic violations. Taking aim at policy, “with the help of driving safety organizations we will provide them with consolidated reports that will allow decision makers to take actions in solving a specific problem.”⁵⁸ In the application, a scrollable and searchable list of license plates belonging to traffic violators is available.

Autobeesy Feen (Third Place)

In order to better predict bus schedules, this crowdsourcing application relies on bus riders to indicate where their bus is presently located, as well as current traffic conditions.⁵⁹

⁵⁴ “Egyptians Tackle Age-Old Problem with Brand New Technology”, World Bank, February 16, 2013, accessed August 16, 2016. <http://www.worldbank.org/en/news/press-release/2013/02/16/egyptians-tackle-age-old-problem-brand-new-technology>

⁵⁵ Ibid.

⁵⁶ “The Cairo Transport App Challenge has finished!”, Transport App Challenge, accessed August 26, 2016. <http://cairo.hackathome.com/>

⁵⁷ “Beliaa: The app that ends car maintenance nightmares”, CairoScene, April 18, 2015, accessed August 15, 2016. <http://www.cairoscene.com/LifeStyle/Beliaa-The-App-That-Ends-Car-Maintenance-Nightmare>

⁵⁸ “Emokhalfa”, AppCircus, accessed August 15, 2016. <http://appcircus.com/apps/emokhalfa>

⁵⁹ “Autobeesy Feen”, AppCircus, accessed 15, 2016. http://appcircus.com/apps/autobessy_feen

A number of international organizations, local civil society organizations and local initiatives, have recently taken on the challenges of urban mobility in Egypt through a number of different lenses. Whether it's through collecting data, conducting qualitative fieldwork research, or organizing local events to rally support for more sustainable and environmentally conscious transportation systems, the contribution of these initiatives are quite significant, yet continue to require concerted effort from governing bodies in order to realize the fruits of their work. In other words, an integrated mobility planning approach is required among the different bodies, for real evidence-based planning to take shape.

World Bank

Although a dedicated Transport, Water, Information and Communication Technology Department (TWI) does not exist in Egypt, the World Bank conducted two important reports on traffic congestion in Cairo. The first report, "Cairo Traffic Congestion Study: Phase 1,"⁶⁰ estimates the annual costs of Cairo congestion to be up to LE50 billion. It also expresses concern over the 1,000 traffic-related deaths in Cairo, and suggests that there are too many cars and few viable alternatives for public transportation.⁶¹ An accompanying study entitled "Greater Cairo: A proposed urban transport strategy"⁶² takes a more comprehensive and concrete look at potential solutions to Cairo's congestion problem.

In 2012, The World Bank and the Google Developer Group in Cairo co-sponsored a "Transport Hackathon" to bring "unlikely but strategic partners together from different disciplines to develop collaborative solutions for dealing with Cairo's traffic problems, and

to meet future transportation needs".⁶³ Additionally, several conference participants "stressed the need for better efficiency and increased use of technology in dealing with transportation challenges" while speakers focused on "the relationship between intelligent transportation systems, and information and communications technology."⁶⁴

In 2015, The World Bank also sent a delegation to Cairo to map 450 of Cairo's 880 public bus and metro routes. The group coached counterparts at the Cairo Transport Authority (CTA) and Cairo Traffic Engineering Bureau (CTEB) on how to use Transitmix, an "open-source web-based sketching tool conceived to help transit planners draw new or existing routes for community outreach purposes."⁶⁵ Unfortunately, these maps did not include stop locations, but initiatives like Transport for Cairo have utilized the GIS mapping data from the World Bank for their own GTFS dataset (expounded upon below).

Other initiatives have focused their efforts towards furthering and developing environmentally-conscious transportation alternatives; an equally critical facet in developing sustainable transportation networks. A number of local groups have been created with the aim of normalizing the use of bicycles as an everyday commuting mode. Other organizations have launched projects to combat greenhouse gas emissions. The move towards environmentally sustainable transport has gained important momentum over the past few years, although the lack of coordination continues to challenge the ease of implementing changes to the urban infrastructure. The following are some examples of events and initiatives that have focused on improving the environmental impact of future mobility planning

⁶⁰ "Cairo Traffic Congestion Study: Phase 1," World Bank, November 2010, accessed August 9, 2016. <http://documents.worldbank.org/curated/en/650141468248419267/pdf/718450ESW0Whit0ing0Annexes00PUBLIC0.pdf>

⁶¹ "Cairo Traffic Congestion Study | Executive Note," World Bank, May 2014, accessed August 9, 2016. <http://www.worldbank.org/content/dam/Worldbank/TWB-Executive-Note-Eng.pdf>

⁶² "Egypt – Greater Cairo: a proposed urban transport strategy (English)," World Bank, accessed August 9, 2016, <http://documents.worldbank.org/curated/en/892401468258874851/Egypt-Greater-Cairo-a-proposed-urban-transport-strategy;jsessionid=0HIAk9Vovvi8HEcPJZP7wTF9#>.

⁶³ Britain Eakin, "Transport Hackathon gathers experts to solve Cairo congestion," Egypt Independent, June 4, 2012, accessed August 9, 2016. <http://www.egyptindependent.com/news/transport-hackathon-gathers-experts-solve-cairo-congestion>

⁶⁴ Ibid.

⁶⁵ "Using open tools to create the digital map of Cairo's public transit", World Bank Blog, January 28, 2015, accessed August 9, 2016. <http://blogs.worldbank.org/transport/psd/health/impacetevaluations/developmenttalk/jobs/using-open-tools-create-digital-map-cairo-s-public-transit>

Orange Bike Day (Annual) – Embassy of the Netherlands in Egypt

Since 2012, the Embassy of the Netherlands in Egypt has hosted an annual Orange Bike Day in Cairo to encourage biking as a mainstream form of urban transport. The 2015 event attracted 5,000 participants, among whom was the Ambassador of the Netherlands, Mr. Gerard Steeghs.⁶⁶ The Embassy has been proactive in organizing other events such as a seminar at Cairo University in 2015, continuing efforts started at a seminar in 2012 on “biking as a sustainable alternative for motorized urban transport.”⁶⁷

At the seminar, Mr. Steeghs drew on the Netherlands’ own historical tension between the use of cars and bicycles, where cars were a much preferred method of transportation until the 1970s, when “new policies were developed to encourage the use of bicycles, which have contributed to the Netherlands becoming the cycling nation it currently is.”⁶⁸ Such policies included bicycle lanes and no-entry zones for cars in the central city areas.

UNDP – Sustainable Transport Project for Egypt (STP)

The UNDP Sustainable Transport Project (2010 – 2016) “aims to reduce energy consumption’s growth and related greenhouse gas emissions of Egypt’s transport sector, while simultaneously mitigating the local environmental and other problems of increasing traffic such as deteriorated urban air quality and congestion”.⁶⁹ Activities include:⁷⁰

1. New integrated high quality public transport services
2. Promoting Non-Motorized Transport – Walking & Cycling
3. Introducing variable message parking signs
4. Improving the energy efficiency of freight transport
5. Enhanced awareness, capacity and strengthened institutional basis

This project has signed a protocol with the Ministry of Transport, Ministry of Housing, Utilities and Urban Communities, Ministry of Environment, and Giza Governorate in order to implement their pilot project.⁷¹ So far, six main corridors in Fayoum and Shebin El-Kom are undergoing construction for cycling lanes as well as sidewalk upgrades.⁷² Additionally, a variable sign message system has been installed in Cairo’s city center in order to direct drivers to empty parking spaces in multi-level parking complexes.⁷³ High-quality bus services to Cairo’s suburbs and shuttle buses to metro stations have also been designed, and are awaiting implementation.⁷⁴

⁶⁶ “5000 participants in the fourth Orange Bike Day”, Netherlands Embassy in Cairo, Egypt, November 22, 2015, accessed August 10, 2016. <http://egypt.nlembassy.org/news/2015/11/5000-participants-in-the-fourth-orange-bike-day.html>

⁶⁷ “Dutch ambassador opens a seminar on cycling in Egypt”, Netherlands Embassy in Cairo, Egypt, November 19, 2015, accessed August 10, 2016.

⁶⁸ Ibid.

⁶⁹ “Sustainable Transport”, UNDP in Egypt, accessed August 10, 2016. http://www.eg.undp.org/content/egypt/en/home/operations/projects/environment_and_energy/SustainableTransport.html

⁷⁰ “Activities”, Sustainable Transport Project for Egypt, accessed August 10, 2016. <http://stp-egypt.org/>

⁷¹ “Sustainable Transport: What is this project about?” UNDP Egypt, accessed August 15, 2016. http://www.eg.undp.org/content/egypt/en/home/operations/projects/environment_and_energy/SustainableTransport.html

⁷² Ibid.

⁷³ Ibid.

⁷⁴ Ibid.

CLUSTER Cairo

With the aim of being a space for urban discourse, “CLUSTER engages critical theorization while being grounded in professional practice, negotiating the blurred boundaries between formal/institutional regulations and everyday urban informality.”⁷⁵

Two of their publications that grapple in part with the topic of urban transportation are “Archiving the City in Flux: Cairo’s Shifting Urban Landscape Since the January 25 Revolution” and “Learning from Cairo: Global Perspectives and Future Visions.” In the form of infographics, the former publication maps roadside developments such as sidewalks, the presence of bus stops on one side of the ring road, and the number of tea stands, staircases, and repair shops accompanying such bus stops.⁷⁶ Afterwards, it historicizes particular aspects of Egypt’s road and transportation infrastructure to explain the original intention and relative deterioration of such services over time based on population booms, shifting urban patterns, etc. The latter publication is based on an international symposium co-hosted with the American University in Cairo to discuss “the current political and urban transformation unfolding in Cairo as a critical context for examining relevant international case studies and best practices in areas ranging from housing, transportation, public space and local governance to informality.”⁷⁷

Transport for Cairo

The Transport for Cairo initiative aims to make Cairo’s first easily legible, publicly accessible, and developmentally friendly public transportation map. In

doing so, “TfC directs its efforts to map all formal and informal transportation in Cairo digitally, and release all data openly.”⁷⁸ In their first phase of work, TfC released one data set, a General Transit Feed Specification (GTFS) feed for the Cairo Metro.

Co-Founder Mohamed Hegazy was inspired by Digital Matatus, an open data map of Nairobi’s informal microbus system.⁷⁹ Hegazy and the project’s second Co-Founder, Houssam Elokda, aim to disrupt the common misconception that smartphone and/or data usage is limited in developing countries like Egypt, where there are currently 15.5 million smartphone users with a data plan.⁸⁰ In their second phase, TfC is using data from a World Bank project on GIS mapping of official bus lines to create a GTFS dataset. This dataset would include stops, trip length, and frequency – information that is more helpful for trip planning.⁸¹

Desert City Mappers

Desert City Mappers, an MSA university initiative, seeks to map informal transportation in Cairo’s desert settlements.⁸²

Volunteers from Desert City Mappers, in collaboration with Transport for Cairo, shot enabled photos of buses and “verified 20 routes two-thirds of the city and produced three maps” of the covered areas⁸³ (one of which is displayed to the left).

The data “will be open source and available on and in an app, and stored in a General Transit Specification (GTFS) format.”⁸⁴

⁷⁵ “About”, CLUSTER Cairo, accessed August 18, 2016. <http://clustercairo.org/cluster/cluster/about>

⁷⁶ Omar Nagati and Beth Stryker. “Archiving the City in Flux: Cairo’s Shifting Landscape Since the January 25th Revolution.” CLUSTER Cairo, 2013. https://issuu.com/clustercairo/docs/archiving_the_city_in_flux

⁷⁷ “View e-publication”, Learning From Cairo, accessed August 18. <http://learningfromcairo.org/publication/epub/>

⁷⁸ “About Transport for Cairo,” Transport for Cairo, accessed August 9, 2016. <http://transportforcairo.com/about-us/>

⁷⁹ “Citizens Make a Difference Together at Transport for Cairo,” Cairo From Below, February 3, 2016, accessed August 9, 2016. <https://cairofrombelow.org/2016/02/03/citizens-make-a-difference-together-at-transport-for-cairo/>

⁸⁰ Ibid.

⁸¹ Ibid.

⁸² “About Desert City Mappers”, Desert City Mappers Facebook Page, accessed August 18, 2016. https://www.facebook.com/DCMappers/about/?entry_point=page_nav_about_item&tab=page_info

⁸³ Williamson, Rachel, “The Startups mapping Cairo’s in between spaces”, Wamda, August 14, 2016, accessed August 18, 2016. <http://www.wamda.com/medialabworkshop/2016/08/mapping-cairos-between-spaces>

⁸⁴ Ibid.

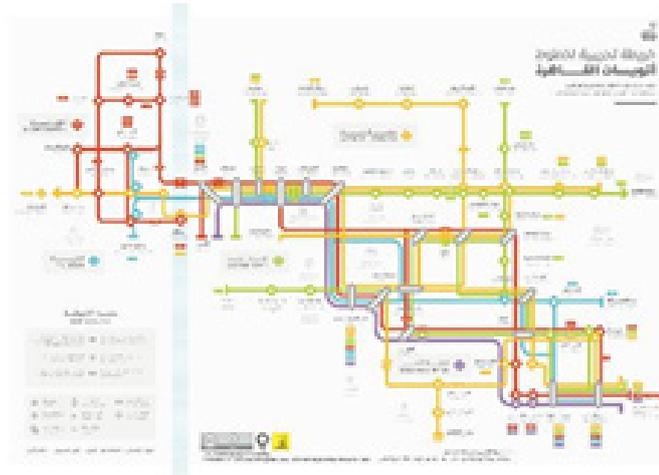


Figure 7

Photo: "Experimental Transit Bus Map: Visualizing 20 Bus Lines in Cairo" ([fb.com/DCMappers](https://www.facebook.com/DCMappers))

Studio Meem

Studio Meem is an interdisciplinary design studio that critically engages with the built environment. In their "Mapping Cairo" project, Studio Meem comparatively visualized issues pertinent to urban planning and the environment, including "the major road and metro line networks – therefore revealing major issues such as the scarcity of green lungs in Cairo and lack of infrastructural connectivity in the metro realm."⁸⁵ In one comparative infographic, Studio Meem sought to:

reveal the differences between transit-oriented development such as Tokyo evident in the large use of rail for movement as compared to Cairo which though [it] has yet to largely adopt the car as a primary mode of transport, has been relying primarily on its informal network of minibuses to transport its masses and is projected to continue to grow in car user-ship unless radical policies take effect to curb that.⁸⁶

The following tables outlines the access points to these initiatives as well as where or not they collect data.

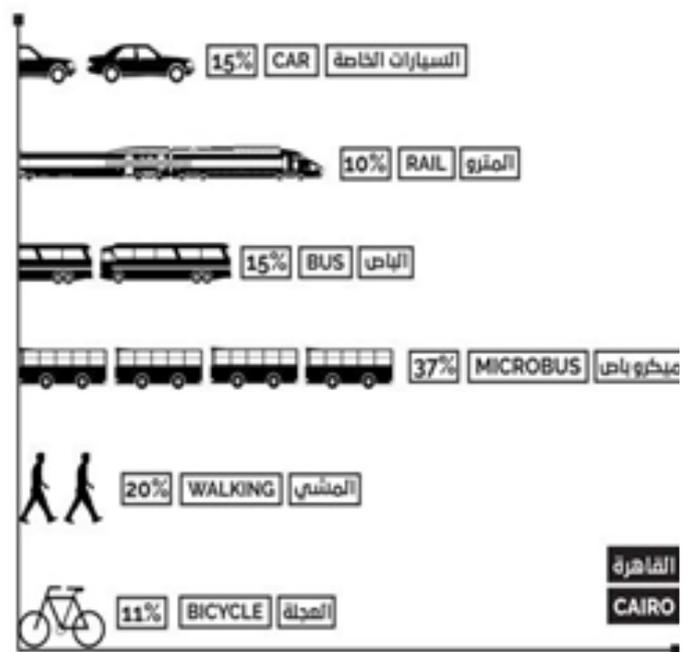


Figure 8

Photo: "Mapping Cairo" (studiomeem.me)

⁸⁵ "Mapping Cairo", Cairo Observer, accessed August 21, 2016. <http://caiobserver.com/post/135740063094/mapping-cairo#.V7mWjpN96b8>

⁸⁶ Ibid.

TITLE	OBJECTIVE	ACCESS POINT	PLATFORM
Non-Traditional Transportation Services			
Bus Pooling	Bus pooling to limit congestion, subscription-based	Web Portal	Web
En2ly	Pairing service for empty freight trucks and shippers in need	3G, GPS	Web/App
Go Bus	Roundtrip bus services from Cairo to other cities and beach resorts	Web Portal	Web/App
Nile Taxi	Scheduled boat services from Maadi, Zamalek, Imbaba, Dokki, Downtown	Web Portal	Web
Pie Ride	Carpooling to limit congestion, subscription-based	Web Portal	Web
Raye7	Carpooling by workplace to limit the amount of private cars on the road	Web Portal	App
Uber & Careem	Safe, convenient, efficient, and reliable private car transportation	3G, GPS	App
Trip-Planning Applications			
Arkab Eh	Fastest route to a destination using all forms of transportation	3G, GPS	App
Autobeesy Feen	Crowdsourcing of bus locations, schedules, and traffic conditions	3G, GPS, Crowdsourcing	App
Beliaa	On-call car mechanic and maintenance services	3G, GPS	App
BeyZollak	Crowdsourcing of traffic flow, congestion, and alternative routes	3G, GPS, GIS, Crowdsourcing	App
Emokhalifa	Crowdsourcing of traffic violations to keep roads safe	3G, GPS, Crowdsourcing	App
En2ly	Pairing service for empty freight trucks and shippers in need	3G, GPS	Web/App
Rakna	On-call valet service to help users avoid wasting time finding parking	3G, GPS	App
Wasalny	Crowdsourcing real-time traffic updates by measuring car speeds	3G, GPS, Crowdsourcing	App
Wasalny Shokran	Helping Vodafone customers avoid traffic congestion (*6# for 30 piasters)	SMS	SMS
Non-Governmental Transportation Initiatives			
CLUSTER Cairo	A space for critical engagement with urban issues (incl. transport)	CAPMAS, Fieldwork	Web
Desert City Mappers	MSA initiative, mapping informal transportation in desert settlements	Fieldwork	Web/App
Studio Meem	Providing critical inquiries into the built environment (incl. transport)	Fieldwork, GIS	Web
TADAMUN	Promoting citizen proactivity with urban planning issues/injustices	CAPMAS, Fieldwork, GIS	Web
Transport for Cairo	Making Cairo's first legible, publicly accessible public transportation map	Fieldwork, GIS, GTFS	Web
IO / IFI Transportation Initiatives			
UNDP (STP Prog.)	Reduction of energy/greenhouse gas emission in Egypt's transport sector	CAPMAS, Fieldwork	Web
World Bank	Dealing with Egypt's traffic congestion and greenhouse gas emission	CAPMAS, Fieldwork	Web

TITLE	DATA COLLECTED	O	X
Non-Traditional Transportation Services			
Bus Pooling	Personal information of users, frequency and location of routes.		
En2ly	Personal information of users and drivers, frequency and location of truck routes and needs.		
Go Bus	Personal information of users,		
Nile Taxi	None. Mobile app TBA.		
Pie Ride	Personal information of users (incl. gender).		
Raye7	Personal information of users (incl. gender and workplace).		
Uber & Careem	Personal information of users and drivers, number of private cars being used in each service, peak traffic times, surge pricing data, etc.		
Trip-Planning Applications			
Arkab Eh	Bus, metro, and minibus routes and schedules.		
Autobeesy Feen	Bus routes, schedules, wait time, peak traffic times.		
Beliaa	Personal information of users, maps of mechanic and workshops, frequency and location of car breakdowns.		
BeyZollak	Personal information of users, congestion (locations/times of day).		
Emokhalifa	Personal information of users, license plate numbers, location and type of offense.		
En2ly	Personal information of users,		
Rakna	Personal information of users,		
Wasalny	Car speeds		
Wasalny Shokran	N/A		
(Non-Governmental) Transportation Initiatives			
CLUSTER Cairo	Roadside developments such as sidewalks, the presence of bus stops on one side of the ring road, and the number tea stands, staircases, and repair shops accompanying such bus stops. Open source data TBA.		
Desert City Mappers	Map of informal bus routes to Cairo's desert settlements (open source data TBA).		
Studio Meem	Economic activity, public space use, transportation, land use, housing, population, illiteracy, poverty, unemployment, school enrolment, etc. Datasets correlate these variables to illuminate target areas. Infographics compare density, urban framework, average income, GDP, gasoline, CO2 emission, McDonald's prices, etc. across several cities including transportation modes and usage.		

TADAMUN	Water information (usage, prices, etc.), electricity information (usage, prices, etc.) gas information (usage, prices, etc.), housing surveys and surveys/data on NUC settlements.		
Transport for Cairo	GTFS mapping of Cairo's metro system including transit agencies providing the data in the feed, individual locations where vehicles pick up or drop off passengers, transit routes, trip sequences, times that a vehicle arrives at and departs from individual stops for each trip, when a service starts and ends as well as days when the service is available, time between trips for routes with variable frequency, etc.		
IO / IFI Transportation Initiatives			
UNDP (STP Prog.)	Overview of public transport in greater Cairo (evolution of modal shares), road freight operators in Egypt (2002-2003), proposed policy initiatives, projected savings in CO2 emissions from 2006 to 2015, estimation of potential ridership of the proposed minibus service, traffic surveys, etc.		
World Bank	Origin/Destination matrices by traffic mode, GIS, traffic volumes & speeds, difference between design capacity and actual capacity, frequency of accidents, locations/types/causes of congestion, total number of vehicles, public transport capacity/fleet composition/age, accident data & information, unit vehicle operating cost, fuel cost, household income & value of time, percentage of daily traffic in peak hour, Passenger Car Unit (PCU) Vehicle Occupancy Factor.		

A paradigm shift in urban mobility

The objective of old paradigms of transportation planning have “Focused on maximizing the distances people travelled given specific time and money constraints.” The system’s efficiency was evaluated based on the speed, affordability and convenience of motorized transport.”⁸⁷ Within this paradigm, road expansion was the main strategy to remedy congestion, although it only exacerbated fuel consumption and increased vehicle travel.⁸⁸ In the MENA region as well as in other parts of the world, a paradigm shift towards public transport is a necessary step that is slowly being realized by policy planners. The shift towards fleets of shared vehicles with the aim of reducing car dependency is a multilayered and tedious process requiring rigorous and detailed feasibility studies, data collection systems as well as shifts in cultural perspectives towards public transport. Urban mobility planning that can take into account existing systems of formal and informal transport, can also ensure higher levels of social inclusivity and economic sustainability.

⁸⁷ “Urban Mobility: More Than Just Building Roads”, TADAMUN, July 25, 2016, accessed August 24, 2016. <http://www.tadamun.co/2016/07/25/urban-mobility-just-building-roads/?lang=en#.WvqwUtOFMfE>

⁸⁸ Ibid.

A severe lack of open data supplied by government transport authorities has hindered much of the effort spent in research, policy planning and implementation. In their mission, initiatives like Transport for Cairo and Desert City Mappers make explicit their intention to open up the data they use, in order to make the maps they create not just useful on paper but developer-friendly. Beyond such initiatives, many different stakeholders – from academics to urban planners to app developers – could similarly benefit from easy access to the vast archive that is Egypt’s transit data. In the same vein, it

could be said that all of the initiatives listed in Table 1 and Table 2 are just as complicit in creating an atmosphere of inaccessibility since they, too, are closed.

In the non-governmental initiatives and IO/IFI initiatives categories, however, there is a plethora of information embedded in reports, infographics, and presentations. Inaccessibility, in this sense, is strictly based on the lack of neatly assembled excel sheets that research centers like A2K4D can use to run their own tests and provide their own conclusions. Additionally, in the case of application data, it is also important for personal data to be protected. Inaccessibility here is defined by the lack of open data available pertaining to anonymized transit information.

Even still, rather than making a conscious decision to close their data, it might not have occurred to these initiatives to open their data at all. This begs the question: If research centers like A2K4D asked these initiatives to open their data – would they? And do they have the resources to do so?

Our hypothesis is this: It varies. Companies like Uber, for example, are more likely to keep their data closed since they are an international company based in the United States, with more rigid legal guidelines for fear of liability lurking in every corner of the globe. Other local applications might be less stringent, but since their overall goal is not necessarily development-oriented, it may be difficult to incentivize data openness.

Non-governmental, IO, IFI initiatives, on the other hand, whose visions are development-oriented may be more welcoming of requests for data openness, if there is in fact a demonstrated need from other development centers and organizations. Seeing as they do share the data they have collected on transportation in the form of tables and reports, the transition to excel documents (which contain the raw data essential to the more visually appealing presentations they publish) seems less daunting or requiring of persuasion.

“5000 participants in the fourth Orange Bike Day”. Netherlands Embassy in Cairo, Egypt, November 22, 2015. Accessed August 10, 2016. <http://egypt.nlembassy.org/news/2015/11/5000-participants-in-the-fourth-orange-bike-day.html>

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“About Transport for Cairo.” Transport for Cairo. Accessed August 9, 2016. <http://transportforcairo.com/about-us/>

“About Us”. Bus Pooling. Accessed August 18, 2016. <http://www.bus-pooling.com/index.php?r=site/page&view=about>

“Activities”. Sustainable Transport Project for Egypt. Accessed August 10, 2016. <http://stp-egypt.org/>

Alaa El-Din, Menna. “Cairo’s tuk-tuk drivers defiant despite ban”. September 12, 2015, Accessed August 28, 2016.

<http://english.ahram.org.eg/NewsContent/1/151/139723/Egypt/Features/Cairos-tuktuk-drivers-defiant-despite-ban.aspx>

Alaa El-Din, Mohamed. “Carpooling app Raye7 looks to expansion plans as interest grows”. Daily News Egypt, March 23, 2016. Accessed August 10, 2016. <http://www.dailynewsegypt.com/2016/03/23/carpooling-app-raye7-looks-expansion-plans-interest-grows/>

“Autobeesy Feen”. AppCircus. Accessed 15, 2016.

http://appcircus.com/apps/autobessy_feen

“Beliaa: The app that ends car maintenance nightmares”. CairoScene, April 18, 2015. Accessed August 15, 2016. <http://www.cairoscene.com/LifeStyle/Beliaa-The-App-That-Ends-Car-Maintenance-Nightmare>

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