Working from home policy and practice review – a research note

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Contents

Executive summary

This report provides a high-level review of policy interventions and practices relating to working from home. This practice, often known as ‘telework’, has long been considered a means to reduce transport demand at peak times, and part of a suite of interventions to reduce congestion.

The current COVID-19 pandemic has resulted in intensive restrictions on movement within New Zealand, forcing many organisations to adapt quickly to working from home. This presents an opportunity to understand how increased work from home practice could be continued New Zealand in the longer term.

This review has analysed policies and practices in several locations and organisations, specifically looking at those actively seeking to increase numbers of people working from home. Areas worthy of investigation in New Zealand have been identified as:

- options for web-based toolkits to provide clear information and encouragement for working from home to employers and employees
- direct support for employers, including personal engagement about how to facilitate working from home practices
- policies around the payment of relevant staff expenses and provision of supplies
- the role that government agencies can play in implementing working from home among their own workforce
- developing clear communications around the reasons for encouraging work from home
- ways to address the role that managerial resistance plays in preventing staff from working from home.

Additionally, this review highlights the need to consider the types of roles suited to working from home, the needs of employees, and some of the barriers faced by both employees and employers in the practice.

Due to COVID-19-related restrictions, New Zealand has undergone a unique experiment in mass uptake of work from home practices. Any approach to influencing related commute behaviour over the longer term will benefit from relevant international experience.

This high-level review has been completed over a quick timeframe in response to changes brought about by New Zealand’s COVID-19 pandemic response. Results and approaches from international case studies are likely to change as this situation develops. Additionally, wider ranging factors such as equity of work from home practices, and wider economic effects relating to increased work from home have not been analysed in this review.

1 Introduction

MRCagney was commissioned by Waka Kotahi NZ Transport Agency, on behalf of the wider land transport sector, to undertake a review of approaches taken internationally to encourage people to work from home.

The 2020 COVID-19 pandemic has resulted in intensive restrictions on movement within New Zealand. Under New Zealand's alert level 4 and 3 restrictions (25 March – 27 April 2020 and 28 April – 14 May 2020 respectively), New Zealand workers and businesses have been forced to adapt quickly to working from home to allow continued operations. This may provide an opportunity to retain a level of working from home practice in New Zealand, building on this experience even as restrictions ease.

This high-level review seeks to fill a knowledge gap around which policy interventions, workplace practices, technologies or other approaches are currently being used internationally to enable and encourage people to work from home.

To understand how travel changed during New Zealand's COVID-19 related alert levels Waka Kotahi, with Ipsos, developed a transport impact tracker. The tracker presents the results of a weekly online qualitative survey that is a nationally representative sample of New Zealanders aged 15 and above. The weekly sample size for the survey is 1259. Survey respondents are asked range of questions, including details about their level of personal concern about the impact of COVID-19, their journeys, and their perception around various transport modes. Data has been collected since Friday April 3, in a series of "waves". The most recent data available for inclusion in this report is wave six. Data for wave six was collected between Thursday 7 May and Sunday 10 May (during New Zealand's alert level 3 period).

Figure 1.1 and figure 1.2 below show the overall behaviour in relation to both work location and transport access to different locations during the level 4 period (25 March – 27 April 2020).

Figure 1.1 Waka Kotahi survey information highlighting respondents' work locations, both usually and during New Zealand's level 4 restrictions (25 March to 17 April). Please note – the information presented here is derived from ongoing research and subject to update.

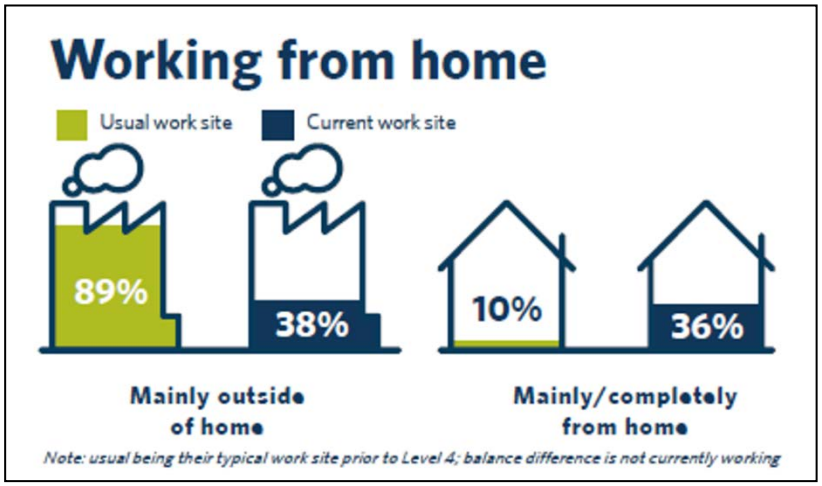
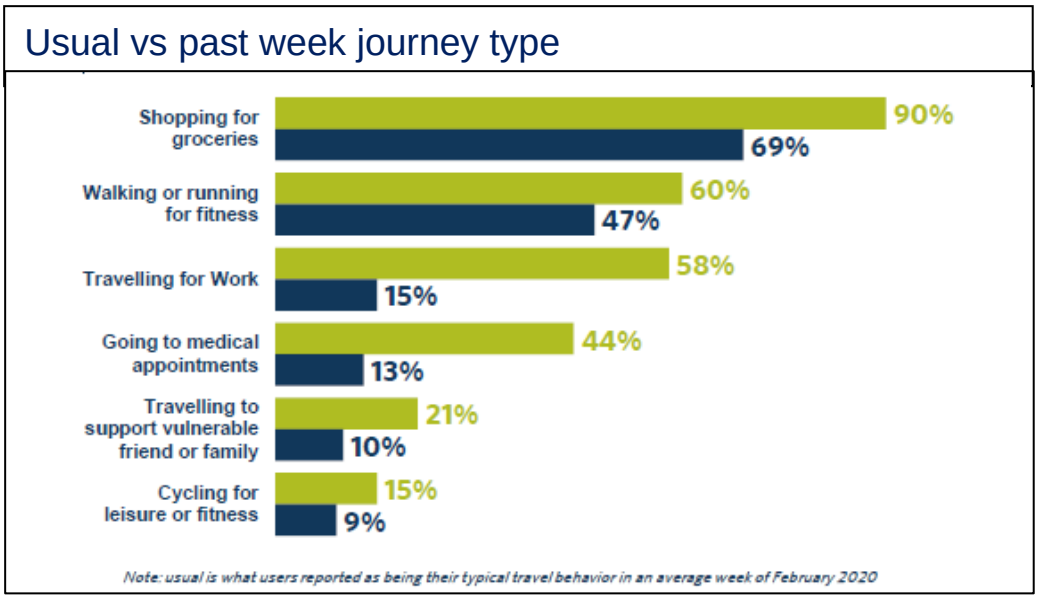
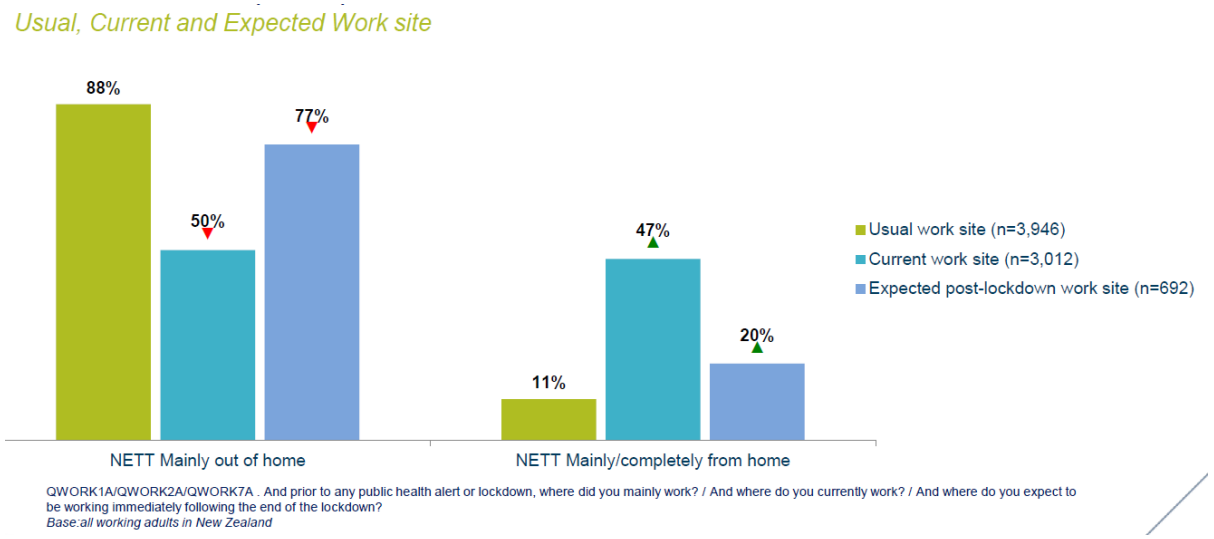


Figure 1.2 Waka Kotahi survey information highlighting respondents' journey purposes, both usually and during New Zealand's level 4 restrictions. The largest difference has been in journeys made for work (25 March to 17 April). Please note – the information presented here is derived from ongoing research and subject to update.



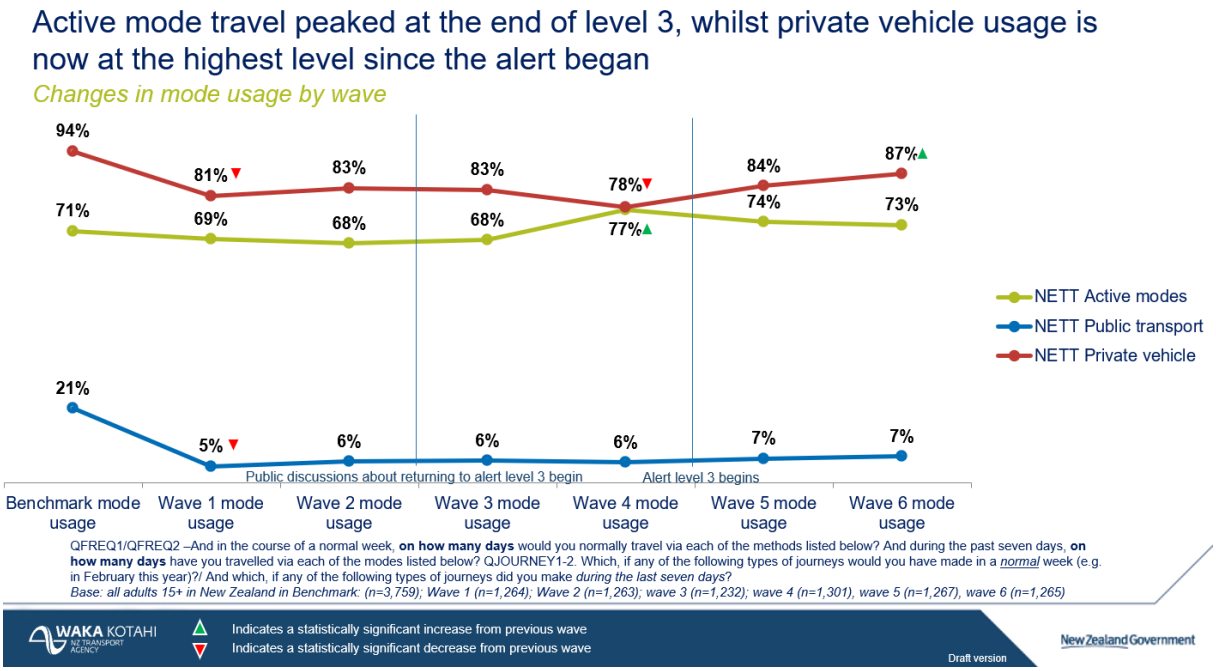
Eighty eight percent of people interviewed as part of transport impact tracker surveys during level 4 restrictions reported normally working away from the home (for example, in an office). Approximately 77 percent expected to return to their workplace after lockdown ended, as shown in figure 3. Ministry of Business Innovation and Employment data estimates that during level 4 restrictions approximately 24 percent of the workforce (including both essential and non-essential workers) were working from home. During level 3 restrictions, this estimate had reduced to approximately 20 percent (MBIE, 2020). New Zealand survey respondents were asked where their main place of work had been prior to COVID-19 related restrictions. Eleven percent of respondents had mainly or completely worked from home before the restrictions, but 20 percent of interviewees expected to be doing so after the end of the lockdown period. A quarter of all interviewees expressed a desire to continue working from home once restrictions are lifted. It should be noted that, due to the transport impact tracker survey being conducted online, there may be a bias towards participants who have access to internet connections and capacity to work from home.

Figure 1.3 Survey responses to Waka Kotahi about workers' usual, current and expected future locations of work before, during and after COVID-19 restrictions. Please note – the information presented here is derived from ongoing research and subject to update.



Between New Zealand's level 4 and level 3 restrictions, there was a significant change in mode usage. During level 4, restrictions were placed on both private vehicle and public transport use, however there were limited restrictions on walking and cycling. Additionally, active modes were encouraged for exercise purposes during this time. Some of these restrictions, in particular those on public transport, continued during level 3. The mode share observed during these times reflects this and is illustrated in figure 4. It should be noted that these results are based on preliminary survey data from transport sector surveys during New Zealand's level 4 and 3 restrictions.

Figure 1.4 Travel behaviour of transport sector survey participants during New Zealand's COVID-19 restriction periods. Please note – the information presented here is derived from ongoing research and subject to update.



1.1 Methodology

This review sought to understand which factors, both in policy and practice, can enable and influence people to work from home. The review was conducted using desktop analysis. Academic literature, government policy, and publicly available reports were used to provide information for this report.

Policies and practices were analysed for the following components:

- the duration of the policy/practice, or start date if still in existence
- type of organisation the policy related to
- types of policies or practices used to either encourage or enable working from home
- uptake or influence on work from home practice, and
- other outcomes, such as productivity, staff engagement or profitability.

As each policy and practice is significantly different, and sits within a different context, not all components exist or were accessible for all examples. Once policies were collated and analysed, a level of qualitative synthesis was carried out to identify key themes from each.

At the time of this review, New Zealand was moving between its COVID-19 alert levels. This review was undertaken over a very short time frame to make the most of the changing work from home opportunities presented by this situation.

2 General work from home information

Numerous studies have been undertaken to establish the benefits and difficulties related to working from home, including environmental, personal, economic, and societal effects. It should be noted that the term 'working from home' is not universal and several different terms are used internationally for this practice. These include most commonly: Telework, Telecommuting and Remote Work. The term Flexible Working or Flexiwork is also often included in analysis of work from home programmes. There are some subtle differences between each of these concepts, including the percentage of time spent at home compared to physical offices or remote working hubs. All terms however, generally have some reference to working from a location other than an organisation's main physical office, with a reliance on technology to enable this. Various studies have different methods of analysing work from home rates, making comparisons between different jurisdictions and studies difficult.

Several studies point to the ability of a large proportion of modern work to be undertaken from the home or locations other than centralised offices (Baruch, 2000). In response to the COVID-19 crisis, Dingel and Neiman (2020) evaluated the feasibility of working at home for all occupations. Based on their classification, they found that 37 percent of jobs in the United States could be performed at home. This accounts for 46 percent of all wages as people in industries that can work from home typically earn more. The 37 percent finding is significantly higher than the number of jobs currently performed from home in the US, found to be less than a quarter of all full-time jobs. Dingel and Neiman (2020) found the number of jobs able to be conducted from home varies substantially by industry and geographic region. Finance, corporate management, and professional and scientific services are the major industries with staff able to work from home easily. The authors point out that these numbers do not account for the relative difficulties different workers may face in working from home.

The ability to work from home is not distributed equitably. Several studies, along with workforce statistics, point out that only some industries have the capacity to allow staff to work remotely and recognise a bias toward high income groups. As an example, the Canadian organisation WORKshift Calgary commissioned a report on the state of telework in Canada in 2011. It found that a 'typical teleworker' was older than the average commuter, more likely to have a university education, more likely to work in a professional or management role, generally earning more, likely working full time, more likely to be non-unionized, more likely to live in an urban area, and likely to have a commute over 20km (Lister & T, 2011). Tanguay and Lachapelle (2020) point to these various factors to emphasise that remote working can be a source of socioeconomic inequality, with the benefits of the practice generally falling to higher income groups and those with office jobs. Additionally, work from home numbers from the US Bureau of Labor Statistics show that people of different races and ethnicities have significantly differing levels of work from home opportunity (Gould & Sheirholz, 2020). These discrepancies and biases are identified as a significant challenge when encouraging further work from home practices.

Over the past few decades, the benefits and pitfalls of working from home have been analysed both by private and public organisations, as well as in academia. Several organisations have reported efficiency benefits from introducing work from home policies, as well as the perception of work from home as a 'perk' for employees. Benefits to the personal life of employees with the opportunity to work from home have also been reported, and it is considered by some businesses as a means to attract workers.

There are several transport and environmental effects related to increased work from home participation. Several studies have investigated the effect that remote working has on Vehicle Miles Travelled (VMT) or Vehicle Kilometres Travelled (VKT), and the associated environmental and congestion impacts. In many studies a reduction range of approximately 50 to 80 kilometres per day has been identified, which can

equate to a 50 to 80 percent reduction in distance driven per day (US Office of Personnel Managment , 2012). Reduced congestion, particularly during peak times, is considered the most likely transport-related outcome of telecommuting (Litman, 2019). As a travel demand technique, telecommuting is complementary to other measures to reduce demand on all types of transport infrastructure (Litman, 2019).

It is important however, to consider 'rebound effects' associated with working from home. These include (Litman, 2019):

- potential for employees to move further from their worksite
- people working from home making additional vehicle journeys for errands, instead of trip-chaining
- employees providing their vehicle for another household member to commute, and
- increased online shopping – requiring delivery.

Some studies have even found an increase in travel demand as a result of working from home (Zhu, et al., 2018). This does not, however, necessarily mean this travel will be during times of congestion on roads or public transport. Other Travel Demand Management (TDM) techniques, such as road and parking pricing, are often considered to be necessary complementary measures alongside promotion of working from home, but require different types of investment (Litman, 2019).

In New Zealand, as in other countries, there has been a significant increase in the number of people working from home in the first months of 2020. This is largely in relation to restrictions placed on movement as a result of the COVID-19 pandemic.

According to Statistics New Zealand, prior to the COVID-19 pandemic, over 50 percent of New Zealand employees already had flexible working hours and one third had worked from home at some point (Statistics New Zealand, 2019). The Trans-Tasman Telework Survey, a study of 1800 staff across 50 Australian and New Zealand organisations, found teleworking was popular among employees, and many organisations were already carrying it out, albeit without specific policies or measures of the benefits (Bentley, et al., 2013).

The emissions and congestion benefits from reducing vehicle journeys overall are potentially significant. Figure 2.1 shows an online dashboard approximating the potential effects on emissions in Auckland of a 27 percent reduction in vehicle journeys (MRCagney, 2020). The reduction of 27 percent is an approximate representation of two days of working from home per week, across the population. The value was approximated by subtracting the 20 percent of "essential" trips, continuing during New Zealand's level 4 COVID-19 restrictions, and distributing the remaining 80 percent of trips across the week, with extra weighting allocated to weekdays. This change shows a significant reduction in both Auckland's transport emissions, and the number of cars on the road in 2030 (figure 2.2).

Figure 2.1 Estimated transport emissions effects relating to relating a 27 percent reduction in journeys among Auckland's population in 2030. Source: https://transport2030.org/

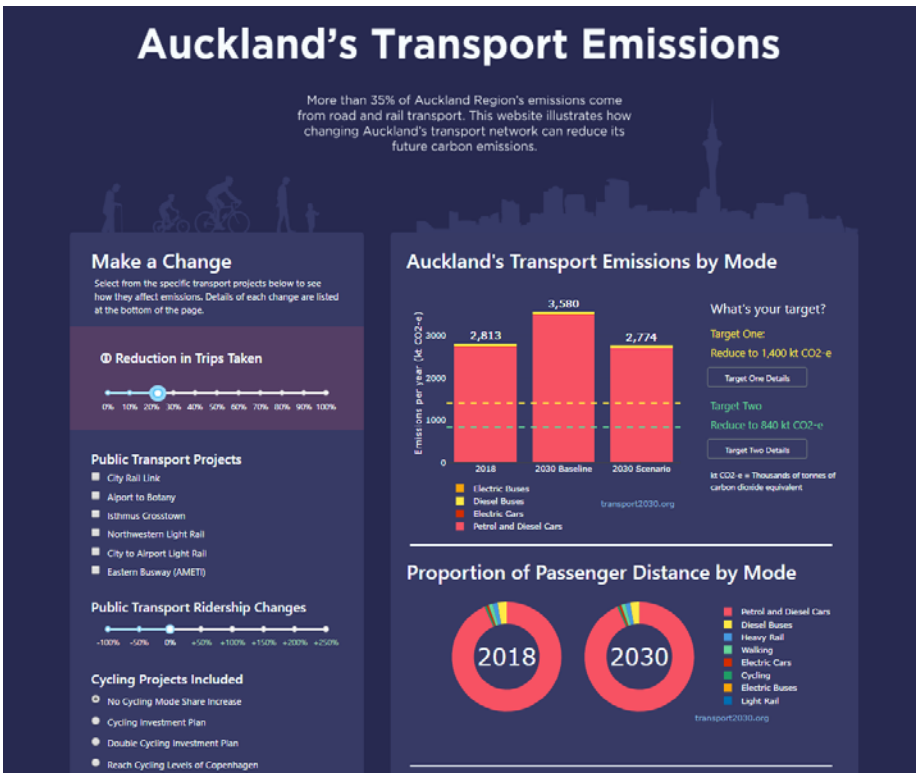
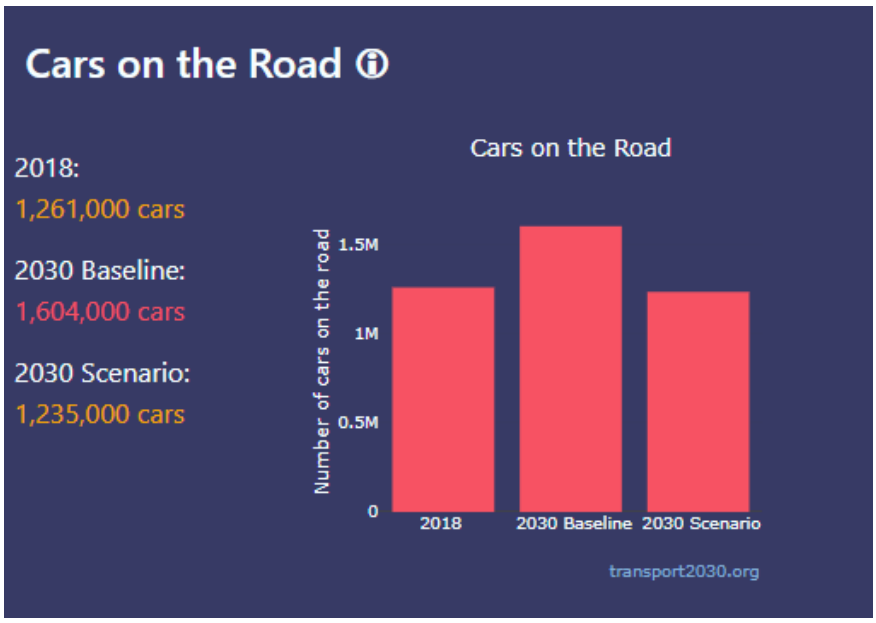


Figure 2.2 Estimated vehicle volume effects in 2030 relating a 27 percent reduction in journeys among Auckland's population in 2030. Source: https://transport2030.org/



2.1 Identified barriers for encouragement of working from home

For decades, literature discussing working from home, or telework, has predicted a rapid escalation of the practice. Despite this, its adoption has been slow, including in New Zealand (Rasmussen & Corbett, 2008). Significant analysis has been undertaken to try and understand this trend, with most of the research looking into the Human Resources barriers and perceptions of businesses towards working from home.

There are clearly repeated themes among the literature trying to establish reasons for limited uptake of work from home practice. These are:

- managerial reluctance to allow staff to work from home (Kaplan, et al., 2018)
- concern from organisations about the costs associated with setting up remote work practices (Aguilera, et al., 2016)
- access to suitable technology and ICT equipment. As internet access becomes increasingly common, this may be perceived to be less of a barrier. (Haddon & Brynin, 2005)
- reduced ability to monitor staff behaviour and work (either in person, or through digital means) (Aguilera, et al., 2016)
- conflicting reports as to the effects of remote work on productivity (Aguilera, et al., 2016)
- concern that work will invade home life (Maruyama, et al., 2009)
- cultural values of both organisations and the location (i.e. a country's general perception around work, and the value placed on presenteeism) (Gschwind & Vargas, 2019)
- health and safety responsibilities for employees who are not in a physical workplace.

Managerial reluctance appears to be the most cited barrier within most of the research. This is unsurprising, as a change to increased working from home is likely to affect the relationship between managers and their teams the most. As will be discussed further in this review, programmes that encourage increased working from home often focus heavily on management training to alleviate this perceived barrier.

In addition to the barriers identified above, negative outcomes relating to working from home may contribute to reluctance to take up the practice. These include:

- fears of social isolation resulting from little time in shared offices
- increased sprawl or negative urban development outcomes as people choose to live further from their place of work, and
- reduced in-office personnel, changing the workplace culture.

A study by Rasmussen and Corbett (2008) specifically analysing the uptake of working from home practices in New Zealand identified barriers including:

- the prevalence of small businesses, who are unwilling to lose a portion of their workforce to a home office
- a lack of active involvement or investment by government, and
- 'outright negative' managerial attitudes to the practice.

The same report suggests New Zealand case studies may be limited by the fact that organisations who are allowing people to work from home are unwilling to make it publicly known, out of fear of attracting employees with the 'wrong' attitude about the practice. The report suggests a mixed approach to expanding work from home practices in New Zealand – with a combination of standard office-based work, and new work from home practices (Rasmussen & Corbett, 2008).

2.2 Identified requirements for work from home success

Within both academic literature and current practice, several factors have been identified as requirements to enable successful work from home strategies. Many of these factors counter or address the barriers outlined in the above section.

These include:

- an appropriate regulatory framework and working culture allowing for a level of flexibility between working and home life (Gschwind & Vargas, 2019)
- access to appropriate technology in home offices, with fast internet being particularly important (Greer & Payne, 2014)
- supportive management, willing to engage workers using new technology and new approaches for performance management (Greer & Payne, 2014; Bentley, et al., 2016)
- a level of demand and enthusiasm from staff about working from home (Lutpon & Haynes, 2000)
- perceived employee benefits, such as improved work-life balance, and
- identification of the industries and roles most suited to the practice.

Multiple studies have noted that some industries are more suited to working from home than others. These are sometimes described as 'high skilled and autonomous workers', such as workers in real estate and financial intermediation (Welz & Wolf, 2010). Other roles found to be well suited to working from home include consultancy services, certain IT roles and other 'service' work that is primarily computer/desk based (Lombard, 2020; Ministry of Manpower, 2018).

A UK-based study surveyed organisations about perceived and actual drivers/barriers to working from home (Lutpon & Haynes, 2000). The researchers found actual drivers to be a change in management attitudes, technology improvements, office cost savings and demand from staff. Tax incentives, increased productivity, activities of competitors, and the state of the economy were all only 'peripheral drivers' in the examples studied.

An exploration of remote working in France suggested introducing informal work from home as a means by which to introduce people and organisations to the concept generally. Further elements that might encourage increased work from home were 'shocks', such as significant increases in fuel (via tax), or congestion charges (Aguilera, et al., 2016).

3 Policy intervention / practice examples

The following sections will outline details of international policies and practices which encourage and enable employees to work from home. Policies and practices have been grouped into the following categories:

- government approaches – both specific policies and overarching approaches by national and regional governments
- policies and practices from individual organisations
- work from home encouragement and practices relating to specific disruptive events.

3.1 Overarching government policy interventions

This section covers a range of policy interventions undertaken at both the central and local government level. These are:

- Singapore's Flexible Work Arrangements
- US Federal Government telework policy interventions
- Minnesota's e-workplace programme
- Virginia's telework incentives and assistance
- Australian Federal and State policies on work from home
- UK and Ireland working from home tax relief
- Finland – Working Hours Act.

3.1.1 Singapore's flexible work arrangements

Location Singapore – city state

Timeframe 2000 to present day (2020)

Responsible body Singaporean Government (Ministry for Manpower)

Reasons for implementation

Singapore's government is seeking to improve the work-life balance of its citizens. Part of that involves the implementation of work-life programmes within businesses.

Policy intervention / practice detail

Singapore set up a 'Work-Life Unit and Tripartite Committee' in 2000 to encourage and enable employers to implement 'work-life programmes'. These programmes included flexible work arrangements, including the option to work from home (Lu, 2015). As a first step, telecommuting (working from home) was introduced as a choice for civil servants.

Particular policy interventions include the publication of a set of guidelines to 'serve as a roadmap for employers who are keen to implement and benefit from work–life strategy' (Lu, 2015). It was found that such guidance was not enough on its own to encourage employers to start working from home initiatives. Due to this, the Work-Life Works! Fund was set up in 2004. In 2013, this fund was renamed the Work-Life Grant for flexible work arrangements.

This grant allows companies to apply for grants and incentives to implement Flexible Work Arrangements (FWAs), including flexible work locations (working from home). Businesses can be awarded SGD$2,000 for each local employee per year who is a regular user of the FWAs. This is capped at SGD$70,000 over the course of two years.

Figure 3.1 below outlines the available incentives under this scheme, and the way the grant amount is calculated for each company.

Requirements include:

- furthering workplace cultures that support better work-life harmony
- flexible work arrangement must be implemented at least 12 times across 6 months (and at least once per month)
- flexible working arrangements should be initiated by the employee.

Figure 3.1 Funding and calculations for Singapore's work-life grant support

FWA Incentive (capped at $70,000)	Job Sharing Incentive (capped at $35,000)
Number of employees[3] who are regular users of FWAs x $2,000 Companies are eligible to receive the FWA Incentive of $2,000 per employee per year for two (2) consecutive years, capped at $70,000 per company.	Number of employees[4] who are on job sharing arrangements on a regular basis x $3,500 Companies are eligible to receive the Job Sharing Incentive of $3,500 per employee per year for two (2) consecutive years, capped at $35,000 per company.
Total funding is capped at $105,000 per company over two (2) years	

COVID-19 response

In response to the COVID-19 situation, Singapore's Ministry of Manpower (MOM) has indicated its intention to encourage companies to offer work from home and staggered hours beyond a mandatory shut down period in Singapore. The Work-Life Grant support is, therefore, being made available as expedited support.

Requirements for this expedited support are:

- workplaces must put flexible working measures in place that prevent further spread of COVID-19 (such as working from home, or staggered hours)
- to be eligible, affected employees must adopt work from home measures on a daily basis for at least one month. Staggered work hour arrangements are accepted for types of work unable to be completed at home, and
- flexible working arrangements can be initiated by either the employer or employee.

Figure 3.2, below, outlines the changes relevant to the current COVID-19 situation in Singapore.

Figure 3.2 Adaptations made to the work-life grant in response to COVID-19. Source: Ministry of Manpower

Parameters	Current WLG Criteria	Enhanced WLG Criteria[6]
1. Duration of FWA adopted	At least 12 times across 6 months[7]	Daily adoption for 1 month *[Note: 1 month period must not coincide with any period where there is mandatory workplace closure or work-from-home / staggered hours requirements.]*
2. Type of FWA supported	All FWAs[8]	Work-from-home and/or Staggered Hours
3. FWA initiated by	Employee	Employer or Employee

On 2 April, it was reported that the Singaporean Government had made changes to the Infectious Diseases Act and employers who failed to make facilities available for staff to work from home could face fines of more than SGD$10,000, stop-work orders, or jail time of up to six months (Yong, 2020).

Results / outcomes

Media reports from 2018 quote Singapore's Second Minister for Manpower and Home Affairs, Josephine Teo, as saying about 1,500 companies had taken part in the FWA programme (Sim, 2018).

A 2018 survey of 1,000 Singaporean employees and 511 employers by the Government-led Tripartite Alliance for Fair and Progressive Employment Practices noted that 83 percent of employers supported flexible work arrangements. Additionally, 82 percent of employees believed their supervisor gave them flexibility to manage their own time. This was an increase of seven percent compared to the previous survey in 2014.

Firms offering formal FWAs, which may include work from home options, increased from 50 percent to 53 percent from 2017 to 2018 and the proportion offering ad-hoc flexible work arrangements increased from 75 percent to 84 percent in the same time (Ministry of Manpower, 2018).

Formal teleworking is the third most common FWA, found in 8.4 percent of formal arrangements, and in 19 percent of ad-hoc flexible work arrangements.

In a 2018 government analysis of work trends in Singapore, industries were broken into the groups of manufacturing, construction, services, and others. The category of others includes agriculture, fishing, quarrying, utilities, and waste management. This category is reported to offer the highest rate of formal teleworking, with 14.7 percent of organisations offering it to employees. It is followed by services, which includes almost all office-based work, such as engineering, financial and insurance services, as well as retail. 10.7 percent of organisations in this industry offer formal telework opportunities for staff. These two groups (others and services) also had the highest rate of ad-hoc telework arrangements for staff (Ministry of Manpower, 2018). Service-related industries saw the sharpest increase in flexible work arrangements overall in 2018.

In 2018, the most significant factor motivating respondents to be more open toward a work-life programme (which would include working from home), was reported as 'direction from senior management to promote work-life harmony' (Tripartite Alliance for Fair and Progressive Employment

Practices, 2019). Additionally, systems to manage flexible work arrangements, and training for supervisors and employees around flexible work arrangements were also considered important (Ministry of Manpower, 2018).

Research analysing the adoption of other flexible work policies in Singapore, such as part time work allowances, finds that although such policies may be cited as being popular or accepted, they can in reality be difficult to implement (Straughan, 2016). Much of the difficulty is believed to lie at the intersection between management levels: upper management supports the concept of FWAs, but middle management, with a focus on traditional methods of performance analysis, can become a barrier to implementation of such practices.

3.1.2 US Federal Government telework policy interventions

Location	United States federal agencies
Timeframe	2000 to present
Responsible body	All US federal agencies are required to prepare and implement their own work from home policy. The Office of Personnel Management (OPM) provides guidance and support, and issues reports to Congress each year.

Reasons for implementation

The US Federal Government has a substantial employee base and recognises several benefits from having its employees working from home. These include reduced energy consumption and traffic congestion, competitive hiring and retention, cost savings, and emergency preparedness (Georgetown University Law Centre, 2006).

Policy / practice detail

The US Federal Government employs more than 2 million people across numerous agencies. For more than twenty years, the Federal Government has attempted to increase the number of employees across its agencies who work from home, using several approaches. It has also monitored the levels of working from home during this time.

The Federal Government has been most successful with this goal in the last 10 years, since the introduction of specific legislation mandating an intensive programme for its agencies. These agencies would be the equivalent of New Zealand's government departments or agencies.

While several different terms have been used, 'telework' is the most common in this context and is defined as a work arrangement allowing an employee to perform work during any part of regular, paid hours at an approved alternative worksite (e.g. home or a telework centre). Telework does not include work done while on official travel or mobile work (such as site visits). It also does not include remote work (where the employee works from a remote location - including their home - on a full-time basis, and this location is considered their official worksite) (U.S. Office of Personnel Management, 2019). Among 50 agencies who reported remote work data, remote workers represented eight percent of all employees.

2000 – 2010 – limited success

From 2000, *Public Law 106-346* required every US federal agency to establish a policy under which eligible employees may participate in telecommuting to the maximum extent possible without diminished employee performance (House of Representatives, 2009). The OPM was responsible for assisting federal agencies in implementing this 'telework mandate' and reporting on progress. The initial target was that the telework mandate would apply to 25 percent of federal employees, increasing each year until 2004 when all federal employees were to be permitted to telework if they could do so effectively.

Congress allocated additional budgets to federal departments and agencies to set up telework programmes. This funding covered both equipment and policy implementation. To try to speed progress, Congress later began to withhold funds from specific agencies to more forcefully encourage full implementation of telework policies. Further executive orders in 2004 directed certain agencies to increase telework participation in the workforces by specified amounts. However, the legislation, funding, withholding of funding and directives had limited effect on telework participation. According to a status report released by OPM in 2009, only five percent of federal employees participated in telework programs in 2008 (House of Representatives, 2009).

The Telework Enhancement Act 2010

In 2010, Congress passed the *Telework Enhancement Act* (TEA), described as 'a significant milestone in the history of Federal telework' (US Office of Personnel Management, 2011). The Act specifies roles, responsibilities, and expectations regarding all telework policies, including to:

- designate a Telework Managing Officer
- determine eligibility of employees and notify them of their eligibility status
- designate a senior manager to coordinate each agency's telework program
- require a written agreement between an agency manager and each of his or her employees authorized to telework
- develop and implement telework training programs for managers and employees
- ensure that interactive training be provided to eligible employees and their managers, and that the training be successfully completed prior to entering into a telework agreement, and
- adopt telework as a part of the agency's Continuity of Operations Plan (Lister, 2019).

Agencies must consult with the OPM in developing telework policies (Telework Enhancement Act of 2010 (US)). The OPM assists and maintains a website to support telework and produces guidelines on information security, archiving, and teleworking during emergencies. The OPM also gathers data and produces annual reports for Congress.

While the TEA and the OPM provide agencies with guidance for developing their telework programs, each agency is left to develop its own policies, training, and procedures. It is also important to note that:

- employee participation (for those eligible) is voluntary, and
- the TEA does not establish a right to telework.

Union concerns

Approximately 36 percent of federal employees belong to a union, and responses from unions to the implementation of the TEA were mixed. Issues raised included:

- the physical burden on employees of carrying a laptop
- the issue of lost paid time off
- ambiguity over which employees were eligible
- ensuring privacy
- the expectation of always being available
- overtime and travel pay issues, and

- employees being expected to use and/or maintain their own technology (Lister, 2019, p. 159).

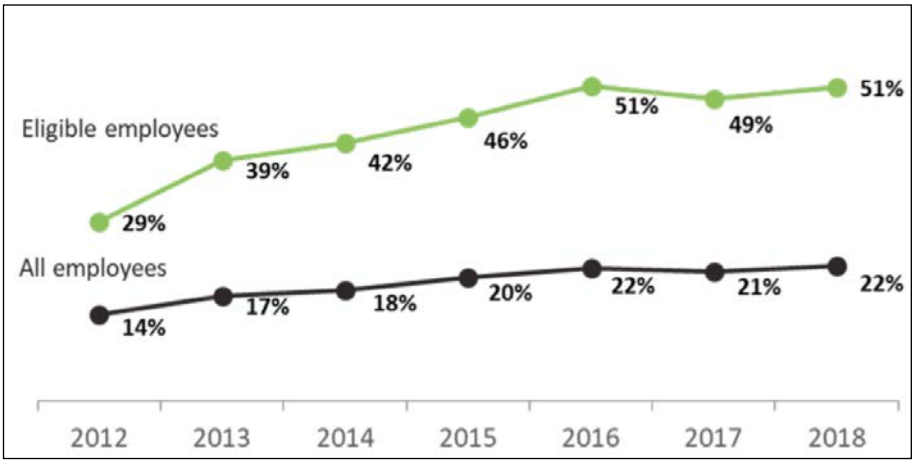
Results / outcomes

The Telework Enhancement Act (2010) has enabled greater participation in telework in US federal agencies (US Office of Personnel Management, 2011). This is particularly noteworthy due to the large numbers of people employed by these organisations. Despite there being previous legislation requiring federal agencies to encourage employees to work from home, the TEA has created clearer responsibilities around how this should be carried out in individual agencies. The Act also recognises the need to train management around teleworking. This appears to have led to significant increases in numbers of staff both eligible to work remotely and actively doing so.

The proportion of eligible federal employees engaging in telework increased significantly after the passing of the TEA. The number of federal employees participating in telework:

- grew from four percent in 2011 to 14 percent in 2014
- levelled out from 2015- 2018, as shown in figure 3.3 below.

Figure 3.3 Telework participation for US federal employees, financial years 2012-2018 (U.S. Office of Personnel Management, 2019)

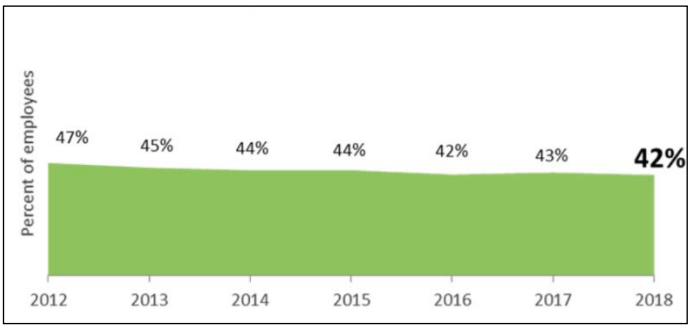


It should be noted that the annual Federal Employee Viewpoint Survey, which collects data from employees rather than employers, reports much higher rates of participation in telework, citing 41 percent participation.

The TEA requires the OPM to report on information relating to telework eligibility, participation, and frequency of participation. The OPM gathers data from federal agencies, who may provide data for either the fiscal year or for a recent two-week snapshot. The OPM's annual reports to Congress are available online from 2004 to 2019 (U.S. Office of Personnel Management).

The most recent report shows that eligibility for telework has remained relatively stable over the last six years (see figure 3.4). In 2018, 42 percent of federal employees were eligible to telework. This compares with 29 percent of all employees in the US (TED: The Economics Daily, 2019).

Figure 3.4 Telework eligibility for federal employees, financial years 2012-2018 (U.S. Office of Personnel Management, 2019)



The OPM notes that many agencies had not re-evaluated their telework eligibility criteria since their programmes were established, which could be 'a missed opportunity for agencies to fully leverage telework and achieve various organizational goals' (U.S. Office of Personnel Management, 2019).

High rates of situational telework

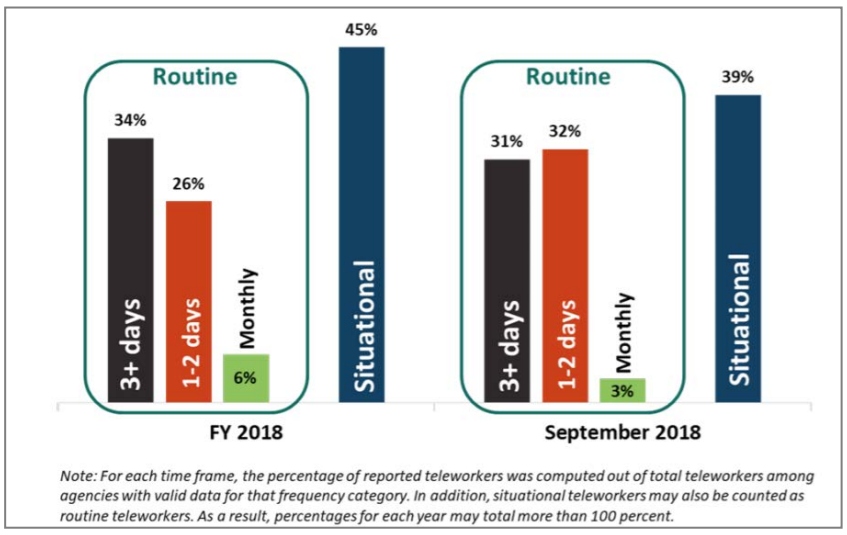
The OPM reporting distinguishes between 'routine' and 'situational' telework:

- routine telework is part of an approved, ongoing, and regular schedule
- situational telework is on a case-by-case basis. Reasons for this may include inclement weather, appointments, or particular work assignments.

Situational telework helps facilitate continuity of operations planning, while frequent routine telework may facilitate other goals such as reducing the cost of office space.

Situational telework constitutes the largest group of teleworkers within US federal agencies, as shown in figure 3.5. The data conveyed in the figure is broken down by the average number of days worked from home over a two-week period.

Figure 3.5 Telework frequency, financial year 2018 and September 2018 (U.S. Office of Personnel Management, 2019)



Other key findings in the *Status of Telework in the Federal Government Report to Congress, Fiscal Year 2018* included:

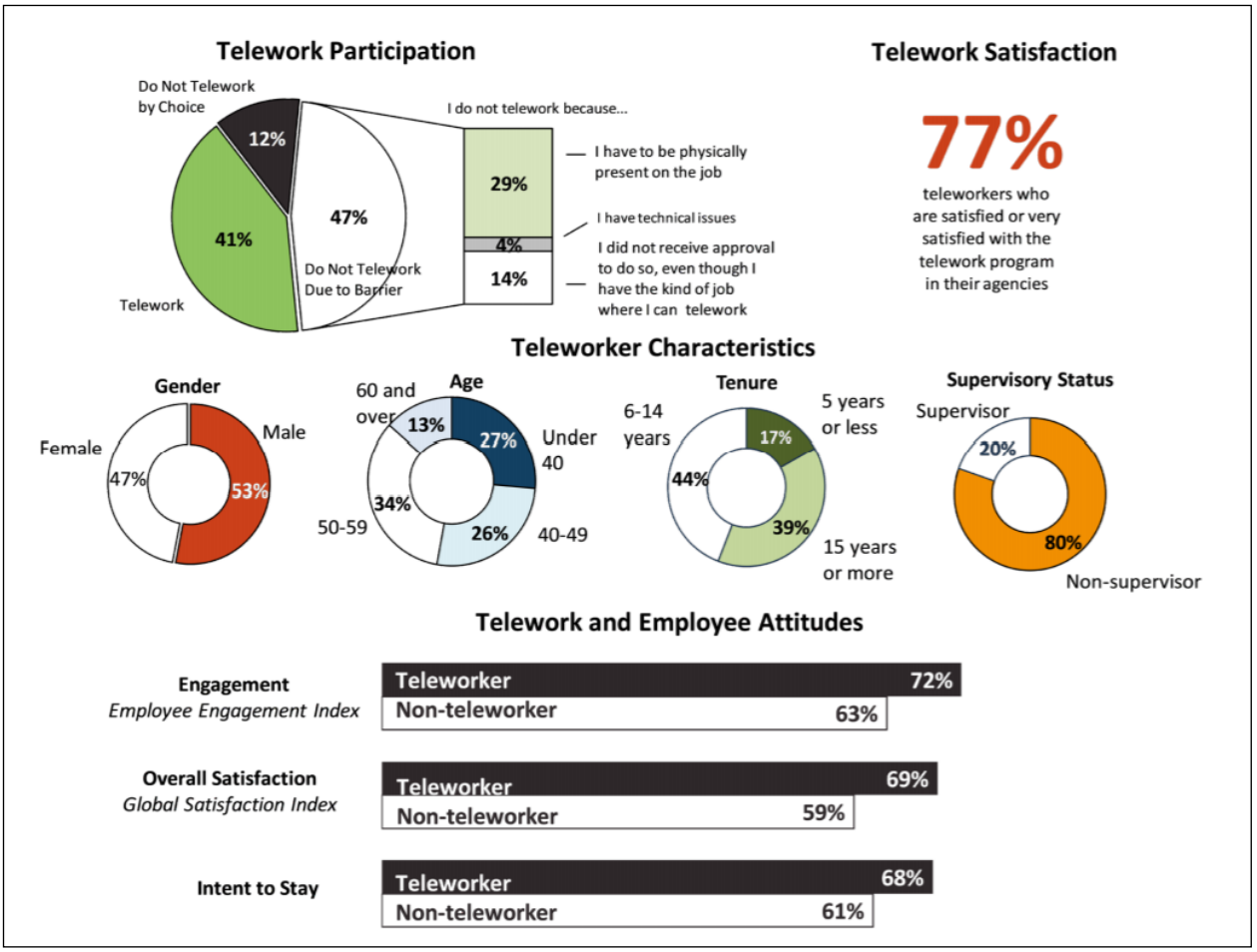
- over a third of federal agencies were able to track cost savings due to telework - a seven percent increase from the previous year
- agency leaders continued to promote telework through their Continuity-of-Operations events and planning, promoting telework in agency-wide meetings (57 percent), aligning telework with agency strategic goals and mission (43 percent), and sending agency-wide emails of support for telework (36 percent)
- 76 percent of agencies met at least one of their participation and outcome goals relating to telework. The most commonly met goal was for infrequent routine telework participation (63 percent of agencies) and emergency preparedness (64 percent of agencies) respectively
- of the 80 agencies reporting data, 28 reported setting goals related to reducing commute miles. While not all agencies recorded data on commute distance or days avoided, the Department of Health and Human Sciences reported:

    > *The average daily commute per the previous HHS Commuter Survey for an HHS employee is 34.34 miles (roundtrip). Based upon the number of employees reporting teleworking at HHS, the HHS had a total of 2,208,000 telework days in FY2017. The telework commuter miles reduced is 75,822,720 miles (2,208,000 x 34.34 miles). If these miles were commuted by a POV and based on the Commuter Survey Tool CO2e MT statistics, the HHS Green House Gas savings would be 26,917 CO2e MT/year. Encouraging and increasing telework has a direct impact on the HHS commuter miles reduction and GHG Scope 3 emissions* (U.S. Office of Personnel Management, 2019).

The results from the Federal Employee Viewpoint Survey

The Federal Employee Viewpoint Survey reports even higher levels of teleworking, as noted above. This survey also reinforces the positive employee perspectives around telework. Benefits reported include greater work engagement, higher satisfaction and greater intent to stay, as demonstrated in figure 3.6 below.

Figure 3.6 Employee perspectives from the 2018 Federal Employee Viewpoint Survey (U.S. Office of Personnel Management, 2019)



3.1.3 Minnesota's e-WorkPlace programme

Location Minnesota – US State

Timeframe March 2009 - March 2018, in three discontinuous phases

Responsible body Minnesota Department of Transportation (MnDoT)

Reasons for implementation

The primary focus for this approach was reducing congestion – Minnesota was one of five regions awarded funding from the US Department of Transportation (USDoT) through an Urban Partnership Agreement (UPA) programme to deliver projects aimed at reducing congestion. Minnesota had seen increasing freeway congestion over a number of years, including a spike in 2007 (Minnesota Department of Transportation, 2016).

The UPA delivered a series of complementary infrastructure, travel demand management (TDM) and technology projects, with a focus on reducing congestion, especially on two main highways, I-35W and Highway 77/Cedar Avenue corridors (U.S. Department of Transportation, 2013, p. ix; Minnesota Department of Transportation, 2013). 'Telecommuting', referred to as 'telework' under the brand eWorkplace, was one of these complementary projects.

Policy intervention / practice detail

The US state of Minnesota has a similar population to New Zealand, with an estimated 5.64 million people in 2019, with 3.28 million of these concentrated in the Twin-Cities area including Minneapolis-St Paul (U.S. Census Bureau).

Minnesota's eWorkPlace programme was established with clear goals and methodology, has strong supporting materials and evaluation reports showing evidence of success which makes it a valuable case study.

Funding, phases, and goals

The state of Minnesota funded the eWorkPlace programme. It is possible, but unclear, that this was due to the requirement for the state to contribute matching funds for the UPA, which ended in 2011. The programme was rolled out over three phases.

Phase 1 of eWorkPlace ran from March 2009 to June 2011 with USD$3.2 million of state funding (Star Tribune, 2016). It aimed to:

- recruit and retain 2,700 new telecommuters across the Twin Cities (with 500 of these employees using the I-35W corridor)
- reduce peak period commuting by eliminating trips and shifting a minimum of 5,400 peak hour trips, and
- provide examples of successful telework programmes to share with interested employers (U.S. Department of Transportation, 2013, pp. D-2).

The USDoT published a 120-page report on the UPA, including detailed evaluation of the eWorkPlace scheme.

Phase 2 ran in 2015 and 2016. No information was found about the goals of phase 2, although there was a bill requesting $2.4 million of state funding (Minnesota Legislature, 2013-14).

Phase 3 (from March 2017 to September 2018), aimed to recruit 1,000 new teleworkers and eliminate 900 peak-hour trips per day, with a focus on reducing congestion during an ongoing, multi-year downtown roading project on a stretch of the I-35W and hosting of the Super Bowl in February 2018.

eWorkplace structure and service

The University of Minnesota Humphrey School of Public Affairs managed the eWorkPlace programme, with support from MnDoT. Through a free website, eWorkPlace (https://www.eworkplace-mn.com/) provided a range of on-line tools and services to assist managers with establishing and maintaining telework programmes. The eWorkPlace-mn.com website provides a comprehensive set of resources including tool kits for employers, recorded webcasts, and telework case studies. This also provides links and summaries of studies that seek to encourage working from home.

During the three phases of funding, eWorkPlace staff helped employers write internal remote work policies, conducted training sessions, and worked through difficulties in implementation. The staff included consultants, who were engaged to lead trainings, conduct communications, project management and direct outreach with businesses and business associations.

Phase 3 specifically promoted telework to employees who usually commuted along the I-35W corridor, particularly during Super Bowl events. Key elements of this outreach were coordinating with the construction project staff and maintaining a strong social media presence, including hosting webinars,

such as ‘Super Bowl Hacks for Twin Cites Employers’ and ’What to Expect when you’re expecting Road Construction in Minnesota’.

A Commuter Savings Calculator was also added to the website. The tool enables workers to calculate not just their monetary savings, but also their impact on the environment when they choose to telework instead of drive to work alone. However, the design does not seem to help employees considered working from home to calculate their savings.

Results / outcomes

By the end of phase 1, eWorkPlace had 48 participating employers and 4,200 new teleworking employees, surpassing the goal of 2,700 new teleworkers. Participating employees completed surveys and travel diaries after one week, at three months, and nine months after registering.

While participants cited their average optimal number of telework days as 2.29, the average of actual telework days was 1.5 per week (U.S. Department of Transportation, 2013, pp. D-8). Based on this data, it was estimated that eWorkPlace participants avoided making 11,350 additional vehicle trips per week and reduced VMT by 7.46 million (over 12 million VKT) per year.

Seventy five percent of participating employers reported an increase in productivity and 93 percent planned to either continue or expand their telework program (U.S. Department of Transportation, 2013, pp. 5-22).

The programme evaluation calculated the Benefit-Cost Ratio for the State’s $3.2 million investment as 9.22, based on the vehicle, time and emissions savings over a 5-year period, as shown in figure 3.7.

Figure 3.7 eWorkplace phase 1 - programme benefit summary (Lari, 2011, p. 12)

Program Benefit Summary	Per Week	Per Year	5-Year
Vehicle Savings (miles)	155,407	7,459,521	37,297,603
Value of Vehicle Savings ($)	77,703	3,729,760	18,648,801
Time Savings (hours)	3,885	186,488	932,440
Value of Time Savings ($)	53,615	2,573,535	12,867,673
Emission Savings (pounds)	170,947	8,205,473	41,027,363
Value of Emission Savings ($)	2,518	120,884	604,422
Total	$133,837	$6,424,179 6	$32,120,89

An evaluation or final report for phase 2 could not be found.

A final report on phase 3 was published by the University of Minnesota, and it appears that data collection for phase 3 was less thorough than phase 1. Data was gathered from some employers and from a relatively small number of individuals who had completed the online Commuter Savings Calculator. However, the report concluded that ’hundreds of new employees were recruited to telework in order to escape construction traffic, and hundreds more began teleworking in anticipation of the Super Bowl and then continued teleworking once the event was over’.’

The teleworkers who completed the online tool averaged two days of teleworking per week, with an average round-trip commute distance of 32.2 miles. As with phase 1, the evaluation reported that the new teleworkers overwhelmingly reported significant improvements in productivity, work-life balance, and overall well-being (U.S. Department of Transportation, 2013).

Lessons from phase 3

By the third phase of the project, technology had improved and telework had become much more common in the Twin Cities and across the US. Adeel Lari, research fellow with the Humphrey School of Public Affairs, noted how these changes affected employee attitudes, and the approach of the project:

> *Telework has become common—this is both great news and the biggest challenge we faced in this phase of our eWorkPlace project. Because so many workers are already aware of telework as an alternative to commuting to an office and so many employers offer remote work, there is less demand for the external telework consulting services that eWorkPlace provides.* (University of Minnesota, 2019)

For eWorkPlace, this trend meant shifting outreach efforts from focusing on employers to promoting eWorkPlace directly to employees (Lari, 2019).

Given that phase 3 was prompted by disruption (in the form of construction projects occurring around downtown Minneapolis and a major sporting event) as commuters sought to escape the congestion exacerbated by road work, it provided an opening for eWorkPlace to advertise its services and enrol new participants.

3.1.4 Virginia: telework incentives and assistance

Location Virginia (US)

Timeframe 2000 to present

Responsible body State government

Reasons for implementation

Virginia encourages telecommuting help ease traffic on the region's congested roads and, more recently, in relation to specific construction projects. The strategy is also motivated by the air quality goals set by the *Clean Air Act* of 1990. The *Clean Air Act* targeted the 11 states with the worst air quality, and organisations in those states with more than 100 employers were required to reduce the number of employees commuting each day by 25 percent (Moon, 2007).

Policy / practice detail

The US state of Virginia has a population estimated at 8.536 million as of July 2019, according to the US Census Bureau with 35 percent (2.9 million) living in Northern Virginia, located immediately across the Potomac River from Washington, D.C.

Since 2001, Virginia has implemented several measures to promote teleworking in the public and private sector. In particular, Virginia has used financial incentives to encourage working from home in order to reduce the burden of vehicle traffic on the state's roads and has created minimum targets for the state sector in terms of numbers of staff working from home.

In Virginia:

- 'Telecommuting' is defined as a work arrangement in which supervisors direct or permit employees to perform their usual job duties away from their central workplace at least one day per week and in accordance with work agreements.
- 'Alternative work schedules' include four 10-hour days, rotational shifts, and large-scale job sharing.

State sector policy requirements

In the public sector, the *Code of Virginia* stipulates that state agencies (the equivalent of New Zealand's Ministries) must establish a telecommuting and alternative work policy under which eligible employees 'may telecommute, participate in alternative work schedules, or both, to the maximum extent possible without diminished employee performance or service delivery' (Code of Virginia, §2.2-2817.1)

The head of each state agency is required to set targets for participation in alternative work schedules, with a minimum target rate of 25 percent of eligible employees. Agency heads must report on the status and efficiency of telecommuting and alternative work schedules.

Such alternative work policies must identify types and categories of employees eligible or ineligible for telecommuting, provide justification for these categories, and set out the benefits of telecommuting or using alternative work schedules. The policy must promote the use of state assets but may also allow employees to use their own devices and equipment if practical and if information security standards are met.

State agencies can reimburse employees or directly pay for expenses (including IT equipment) necessary to perform the requirements of the employee's position from an alternative location (Office of the Comptroller, Commonwealth of Virginia, 2016). Support for the state public sector also comes from the Department of Human Resources management, which provides a free online module for managing teleworkers and links to other resources.

Telework!VA

Virginia incentivises teleworking by employees in the private sector to reduce the number of commuters on state roads. The Department of Rail and Public Transportation leads these measures through its program, Telework!VA. The state-wide programme provides technical advice and on-site assistance for businesses to establish or expand telework programs for employees.

Website

Telework!VA's website (http://www.teleworkva.org/) provides:

- a freephone number
- a web contact form
- instructions and resources for setting up a telework programme, including:
  - tools for considering costs and savings
  - organisational assessment
  - office set up
  - safety, security and communication procedures
  - telework sample agreements and templates
  - training materials
  - manager information.

Financial incentives

Telework!VA also supports business with accessing financial incentives for setting up or expanding telework programmes.

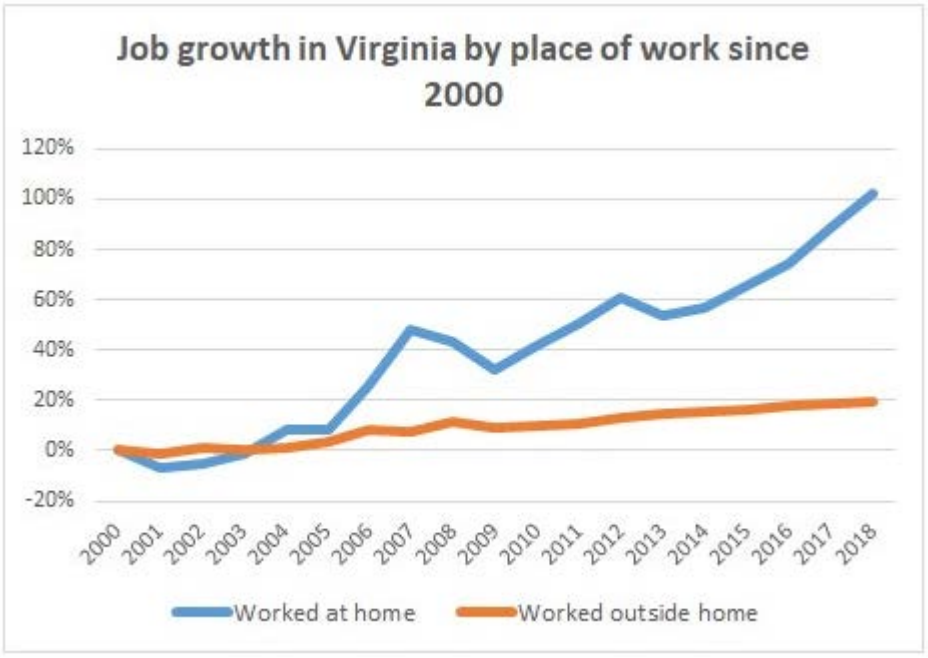
Previous incentives included a telework tax credit (administered by the Virginia Department of Taxation) for eligible telework expenses. Businesses were entitled to US$1,200 per employee and up to US$50,000 per organisation, with the total aggregate capped at US$1million. The tax credit was available from 2012 and expired in 2019 (Cox, 2019).

Current incentives target businesses along Northern Virginia's Interstate 66 route during construction work along the corridor. Businesses can apply for subsidy of up to $10,000 to reimburse telework-related expenses for employees entering new telework agreements through Telework!VA. This incentive seeks to reduce the vehicle demand on this stretch of road during times of reduced capacity (Virginia Department of Transportation, 2020).

Results / outcomes

The number of Virginians who work from home has increased since the early 2000's (Virginia Department of Transportation, 2016) and particularly in the period after 2015. From 2010 to 2018, there was a 43 percent increase in the number of people who primarily worked from home. As of 2018, about six percent of the population - roughly 250,000 people - primarily worked from home. Much of the growth was in the period 2015-2018. In terms of job growth, rates of jobs which are based at home have significantly increased compared to jobs worked outside the home, which have seen very little change. This trend is outlined in figure 3.8, showing change compared to 2000. Academic commentary has attributed the growth to a change in the way employers and employees view work, and low unemployment requiring employers to offer flexibility, without mention of state incentives (Lombard, 2020). Industry sectors with the highest rates of telecommuting in Virginia are management and consulting services, with 25 percent of workers in these industries primarily working from home. Other office-based jobs with high rates of work from home include computer systems design, insurance, accounting, real estate, and finance. In contrast, education and public administration had very low rates of work from home in Virginia in 2018 (Lombard, 2020).

Figure 3.8 Job growth in Virginia by place of work since 2000. Source: Lombard, 2020 based on 2000 Census and 2001-2018 Census American Community Survey



3.1.5 Australian federal and state policies on work from home

This section outlines Australia's pre- and post-COVID-19 work from home approaches. Additionally, some particular travel behaviour initiatives relating to remote working are outlined at the end of this section.

Location Australia (both state and federal scale)

Timeframe Pre *COVID-19*:

- Workplace initiatives since 2010, focus on New South Wales (Sydney) and Queensland.
- Workplace Travel Plans in general (Flexible Work an element) at local government levels.

COVID-19 – From March 2020

Responsible body Federal Government and State Government Initiatives

Reasons for implementation

There were three primary reasons:

- mandated by NSW Government for new development planning consents
- Travel Behaviour Change programs for travel demand management, environmental sustainability objectives, and health/fitness objectives.
- From federal government - mandated initially/now encouraged - to limit potential transmission of virus.

Policy intervention / practice detail

Pre-COVID-19

Australia-wide, businesses have discretion to enable work from home arrangements and several businesses already had flexible working policies and arrangements in place, enabling staff to work from home where appropriate and practical.

- To build a case for the national broadband network, in 2010 the federal government set a target of 10 percent of the workforce remote-working, half the time. At the time, an estimated six percent of employed Australians had some form of regular 'teleworking' arrangement.

  Access Economics, an economics consultancy firm, estimated this could save AUD$1.4 billion to $1.9 billion a year – about $1.27 billion of that being the time and cost savings of avoided travel (Sander, 2020).

Currently, there is no mandated incentive programme or requirement at either the federal or state government level in Australia to provide working from home choices.

COVID-19 response

On 29 March 2020, the Australian Prime Minister Scott Morrison advised that all Australians should stay at home, except for a limited number of reasons. All Australians were able to leave the home to go to work, however, employers should allow workers to work from home wherever and whenever they can.

- All federal and state public service personnel commenced a rotational (half staffing) work roster where possible in week 1 of Australia's lockdown period. Then, federal and state personnel (except for critical essential services) were directed to work from home, with building access passes locked to disable access.

On 24 April 2020, Australia's National Cabinet endorsed a work-from-home strategy for all employers. Public agencies were directed to encourage at-home working. The guiding principles centre around health and safety and HR policies, rather than reducing travel.

On 6 May 2020, the Prime Minister reported he would '*love to see a return to work across the board, including workers physically returning to offices*'. Targeting BAU in July, strategies are now re-focusing on 'safe' workplaces (Prime Minister of Australia, 2020; Landis-Hanley, 2020).

Supporting policies/incentives for working from home

The following policy arrangements outlined below apply for the remainder of this financial year (30 June 2020). Ongoing relief and stimulus packages will be reviewed in June.

- Australian Tax Office's (ATO's) new tax 'shortcut' means people working from home can claim 80 cents per hour as a flat rate for all running expenses, rather than needing to calculate costs for specific running expenses. The change will apply from March 1 to June 30, after which the ATO will review the arrangement. Taxpayers still may choose to use the original policy of applying 52 cents per work hour to calculate the work-related portion of specific items such as phone and internet expenses, computer consumables, stationery, and the decline in value of a computer, laptop, or similar device. The 80 cents per hour method was introduced for many Australians who had never worked from home before, who were expected to find it difficult to apportion costs under the original method, which requires detailed reports/verifications (Australian Taxation Office, 2020).
- Electricity and utility relief payments - in Queensland and in Australian Capital Territory, all residential accounts will receive a $200 (GST exempt) one-off rebate on their electricity bill in response to COVID-19 (Energy Australia, 2020).
- National COVID-19 safe workplace policy, principles, and guidelines were released on 25 April 2020 (Safe Work Australia, 2020). While these do not specify work from home requirements, they do state that businesses 'must, in consultation with workers and their representatives, assess the way they work to identify, understand and quantify risks and to implement and review control measures to address those measures'.
- Remuneration guarantee - all employers are mandated that employees must be paid their regular remuneration if they are willing and able to attend work but are directed by the employer not to attend work (Gilbert+Tobin, 2020).

Strategies currently being considered during the easing of COVID-19 related restriction

The following strategies have been compiled from the *WorkSafe* websites from each Australian State:

- numerous web portals for employers/workers, inclusive of checklists, case studies, fact sheets etc to assist with workplace plans *(these mostly come from WorkSafe Agencies rather than transport agencies - this was the case prior to 2020 also)*
- continued support for 'work from home' where practical and where desired by employees for at least next six months
- half-staffing/rotation of staff physically in office
- odd/even house number rotation of return to work (Clarke, et al., 1010)
- staggered start/end to working hours

- encouraging active travel options such as walking and cycling through policies like bicycle sales/maintenance discounts, priority to active transport in road network, priority pedestrian crossing signalisation
- personal mobility options – safer/confined transit to work in conjunction with on-demand/shared service providers, and
- satellite remote working offices – working closer to home - enabling shorter trips (also supporting walking and cycling access), less requirement to commute to inner city/central business districts with more dense populations.

Examples of workplace initiatives prior to COVID-19

Queensland - distributed work centres initiative**:**

The Queensland Government has been rolling out Distributed Work Centres (DWCs) in key commuter corridors since April 2016 (Queensland Government, 2019). A DWC is a designated office space in a location that is remote from an employee's primary office location. These centres have been established in vacant or underused office space in the government's property portfolio. Registered government employees can work up to three days per week from a DWC as agreed with their manager. Employees work their remaining days from their normal office location in the Brisbane CBD.

Locations are selected largely based on areas where government employees are commuting significant distances to Brisbane CBD (the location of their usual workplace).

Current locations of distributed work centres are:

- Ipswich – approximately 45km from Brisbane CBD
- Robina (Gold Coast) – approximately 85km from Brisbane CBD
- Maroochydore (Sunshine Coast) – approximately 100km from Brisbane CBD
- Logan – approximately 25km from Brisbane CBD.

Ipswich, Gold Coast and Sunshine Coast have the highest catchment of public servants that commute daily to a Brisbane CBD-based job. Surveys of employers and employees are undertaken following a trial period. So far, all have continued to operate. Reported benefits indicated high satisfaction from employees and satisfaction from employers (although not to the same level as employees).

- Employees working closer to home report benefits as:
  - less time and cost commuting to and from work
  - better work/life balance
  - greater trust between managers and their team.
- Organisation benefits are reported as:
  - reduced absenteeism
  - increased productivity
  - improved inclusion and diversity
  - creating networking and collaboration opportunities with other agencies.

NSW travel choices

The Travel Choices programme was established in 2015 to support the construction of Sydney's CBD and South East Light Rail (NSW Government, 2018). It aimed to maintain a high level of awareness of the need to change travel behaviour to minimise the effects of disruptions. The programme is reported to have contributed to a nine percent reduction in cars during morning peak in the CBD. Travel Choices provides several free resources to help individuals, businesses, and organisations plan or change travel behaviour. The Travel Choices team also provides support for those making the shift to more sustainable ways of moving into, out of and around Sydney.

To date, the NSW government reports the Travel Choices team has worked with over 850 businesses and organisations across Sydney, including providing two-hour face-to-face briefings with employers and staff. The NSW government reports the programme has contributed to a 13 percent reduction in vehicles entering the CBD and a 14.7 percent increase in public transport trips during the morning peak.

The Travel Choices programme includes advice on 'flexible working arrangements' to manage demands and has developed a Flexible Working Toolkit which includes:

- telecommuting for staff
- flexible work hours
- online retail
- freight delivery innovations - e.g. drones, remote collection services etc, and
- online remote training (for students/apprenticeships).

During the pandemic period, workplaces should ensure they maintain 1.5 metre distance. NSW is 'urging' commuters to plan ahead and consider travelling outside peak hour where possible. Suggestions encouraged include (NSW Government, 2020):

- stagger start, finish, and break times to reduce the number of workers on site at the same time
- where possible hold essential gatherings, such as training, outdoors.

Due to COVID-19, the Travel Choices team is not currently working directly with specific workplaces but providing support via online resources.

Results / outcomes

Pre-COVID-19

Most surveys of employers/staff work practices focus on human resources rather than travel reduction benefits. Outcomes for Travel Behaviour Change (TBC) programmes do not disaggregate outcomes by individual elements (work practices being one element of a TBC Work Plan).

In 2019 (survey by Censuswide of 1003 employees and 200 employers in Australia), it was reported that 68 percent of Australian employers allow remote working but reported 'divided attitudes'. The report recommended *'circumstances in which remote work is most appropriate and the optimum frequency—rather than implementing a blanket one-size fits all policy'* (Indeed blog, 2019).

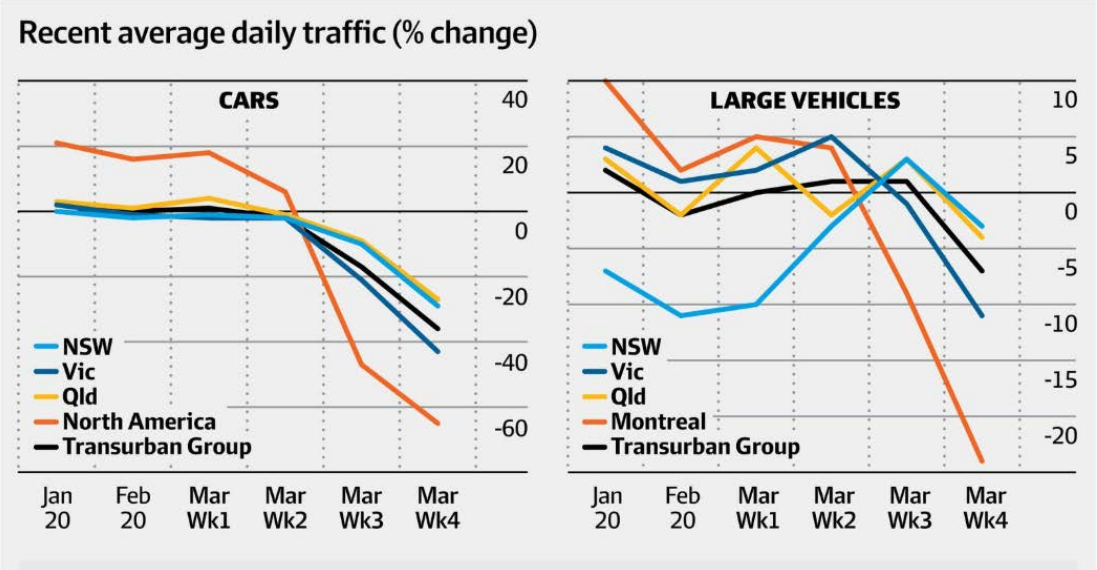
COVID-19 response

Vehicle changes

Transurban has reported a reduction in traffic volumes on of its toll roads in the March quarter (see figure 3.9 below). Overall, car traffic has fallen faster than truck traffic on Transurban's roads. While the volume

reduction is less than recorded on its North American toll roads, there has been a 20 – 40 percent reduction in Australian cities.

Figure 3.9 Transurban Toll Road data as reported in the Australian Financial Review on 1 April (Wiggins, 2020)



Australia's recorded road toll has also reduced. According to the Bureau of Infrastructure, Transport and Regional Economics, road deaths in March 2020 were 5.1 percent lower than the five-year average for March (Australian Government - Department of Infrastructure, Transport and Regional Economics, 2020).

Walking and cycling changes

Transport for Brisbane passenger records and Brisbane City Council counter data show:

- public transport (bus and ferries) decreased by 87 percent in March 2020
- 22 percent increase in weekday cyclists – including a 47 percent increase on commuter bikeway routes
- pedestrian use has also increased by 51 percent on weekdays and weekends.

Organisations encouraging working from home

Telecommunications company Optus, which employs up to 20,000 people, has publicly stated it will make COVID-19 era work-at-home measures a permanent feature of its call centre operations (Fernyhough, 2020).

A recent survey by global research and advisory consultancy Gartner HR, reports 88 percent of organisations have encouraged or required employees to work from home due to COVID-19. Fifty percent of organisations now have 81 percent or more of their employees working remotely as a result of the COVID-19 pandemic. Only 10 percent of employers plan to reduce working hours, and just six percent report asking employees to take unpaid leave. While 30 percent of employees surveyed worked remotely at least part of the time before the pandemic, Gartner analysis reveals that post-pandemic, 41 percent of employees are likely to work remotely at least some of the time (Mitchell, 2020) (B&T Magazine, 2020).

Although empirical results relating to working from home appear limited in Australia, work has been done to predict the overall effect of increased work from home practices. This includes a 2007 study

investigating various work from home scenarios in New South Wales. The research developed a simulation model based on different scenarios to estimate savings of VKT using data available from published sources. Telecommuting was defined as the full or part substitution of journeys to work by working at alternative locations. It concluded that a scenario of telecommuters working remotely 1.1 day per week on average could lead to a potential 14.1 percent reduction in VKT in 2021 (Vu, n.d.).

A 2010 study, commissioned by the then Department of Broadband, Communications and Digital Economy (DBCDE), found that if 10 percent of Australian employees were to telework 50 percent of the time, the total annual gains would be in the order of AUD$1.4-$1.9 billion per year as a result of savings from travel avoided, reduced office accommodation costs, increased labour force participation and the retention of staff. It reported that teleworking employees avoid a time cost of travelling to and from work of three hours and 37 minutes on average per week. It also estimated that if 10 percent of employed Australians teleworked for 50 percent of the time, travel savings per year would total more than 1.3 billion kilometres.

3.1.6 United Kingdom and Ireland working from home tax relief

Location United Kingdom (UK) and Ireland

Timeframe Ongoing

Responsible body Governments of the Republic Ireland and the United Kingdom (separately)

Reasons for implementation

The impetus for this policy appears to be purely related to tax and income, with no indication it serves as a tool to encourage working from home.

Policy intervention / practice detail

In the UK and Ireland, employees working from home may claim a capped tax relief for expenses incurred working from home.

UK

In the UK, tax relief is available for employees who must work from home regularly:

- employees can claim annual tax relief for up to £2,500 of expenses incurred for work (such as business telephone calls, additional gas or electricity, or, arguably, purchasing equipment) (ATT, 2020)
- the amount of tax relief (up to the annual cap) is calculated based on the income tax the employee pays (e.g. 20 percent, 40 percent or 45 percent)
- expenses that would have been incurred anyway, such as rent and broadband access, cannot be claimed. The tax relief is not available for those who choose to complete extra work from home, for example by taking work home in the evenings (UK Government, 2020)
- alternatively, employers may choose to pay employees up to £6 a week, free of income tax, to cover additional costs for working from home. This rate has been increased from £4 in previous tax years
- the employer may also reimburse the worker for a greater amount of additional expenses, tax free, if evidence of those costs is provided. If the employer does not pay the employee the allowance, the employee may claim £6 per week of tax relief (Chiene + Tait Chartered Accountants, 2020).

Usually, a written working from home arrangement is encouraged to receive the allowance, but during the COVID-19 pandemic the tax office will accept that employees working from home because their

employer's offices have closed - or because the employee is following advice to self-isolate - meet these requirements.

Ireland

In Ireland, employees may claim tax relief for expenses working at home, with similar rules and definitions.

Employers may pay €3.20 per day tax free to cover additional costs associated with working from home.

- Employees who receive this payment but incur greater expenses may claim tax relief on the balance.
- The tax department considers 10 percent of home expenses to be business expenses, which may be claimed only for those days worked from home (Revenue Irish Tax and Customs, 2020).

Results / outcomes

It does not appear that the direct effect of this tax relief on rates of working from home has been measured. However, tax rebate measures or work from home subsidies have been implemented for people working from home in many other case studies examined in this report.

3.1.7 Finland – Working Hours Act

Location	Finland - Finland is of reasonably similar population size to New Zealand, with a population of 5.5 million in total. Helsinki, the capital city has a population of 631k. The population of Tampere is 226k. Generally, population density is the same as New Zealand (18 people per square kilometre).
Timeframe	In Finland, 'remote working' (the more common terminology applied in Finland, including working from home and from mobile and remote sites) has been practiced since the 1990's (Huuhtanen, 1999)
Responsible body	Finnish Government

Reasons for implementation

Remote working is largely an outcome of Finland's focus on fostering leading edge information and communications technologies (ICT).

- Six percent of the Finland workforce is in the ICT sector, the highest of any European country (European Commission, 2017).
- This compares with New Zealand which has approximately 2.8 percent of the working population in the ICT sector (Stats NZ/Tatauranga Aotearoa, 2019)

This employment profile facilitates the potential for flexible working practices because it is less bound to a certain location and day.

Finland also has a strong reputation for being a leader in work/life balance. Just four percent of employees regularly work 50 hours a week or more, well below the average across the western world, according to OECD reports (OECD, 2020). Helsinki is at the top of global quality of life rankings, such as Monocle's Quality of Life Survey (Helsinki ranks 6th) and Cities for the Best Work-Life Balance (Helsinki ranks first) (University of Helsinki, 2020).

Policy intervention / practice detail

Finland's *Working Hours Act 1996* gave most staff the right to adjust the typical daily hours of their workplace by starting or finishing up to three hours earlier or later.

By 2011, 92 percent of companies allowed workers to adapt their hours, compared to 76 percent in the UK and the US, 50 percent in Russia and just 18 percent in Japan (Savage, 2019) (Grigorian, 2020). In Finland, as many as 30 percent of people work outside the normal working place once or more in a month, and as many as 40 percent 'occasionally' (If P&C Insurance Ltd, 2020).

In March 2019, the Finnish parliament passed a new *Working Hours Act of Finland*, which came into effect from 1 January 2020 (Ally Law, 2019):

- The revised Act introduces new tools for additional flexible working hour arrangements:
  - The location of work is no longer crucial for the calculation of working hours. The application of the new Act does not require any work to be carried out in a certain place.
    - Under the previous 'flexible working time arrangement', the employer and employee could agree to cases where the employee could independently schedule when and how – including determining location of at least half of their working hours.
  - A new 'working hours' bank concept has been introduced – its key purpose is to better coordinate the employee's work and leisure time - the amount of permitted daily 'flexitime' is now four hours instead of the three under the previous Act. The maximum allowed accumulation of excess hours has increased from 40 to 60 hours.
    - Employees can independently decide on the time and day on which they perform their work, within agreed limits. However, regular working hours must 'equalize' to 40 hours per week over a four-month period.

COVID-19 response

On 12 March 2020, the Finnish Government gave the recommendation that all employers should prioritise remote work if possible, meaning employees can choose to work remotely.

On 16 March 2020, the Finnish Government declared a state of emergency due to COVID-19. Schools were closed, although preschools and grades 1-3 could remain open to allow critical personnel to work. General local and border movements were restricted severely. However, limited public gatherings were allowed to a maximum of 10 people (Ministry of Transport and Communications (Finland), 2020). The city of Helsinki also focused efforts on developing digital cultural services for its population in its aim '*to maintain a stimulating urban life and to reduce the mental health impacts from social distancing and isolation*' (Finnish Institute of Occupational Health, 2020).

To date, there have been no mandatory obligations for employers specifically in relation to COVID-19 beyond the legislative duty of care obligations to protect the health and safety of their employees (Bird & Bird, 2020):

- employees will generally remain entitled to full salary and benefits in accordance with their employment contracts and applicable laws and collective bargaining agreements
- where possible, employees are instructed to continue to perform their work duties remotely
- critical personnel have been temporarily exempted from the Working Hours Act and Annual Holidays Act, both in the private and public sector
- employment legislation was also temporarily amended to allow employers to adapt activities more quickly in response to the COVID-19 situation. The changes entered into force on 1 April and remain in place until 30 June 2020. These mainly relate to termination/temporary lay-off notice period

reductions (however, all laid off workers will immediately be entitled to unemployment subsidies even if they are engaged in business activities or studies).

The Finnish Government will be easing restrictions gradually, with most libraries, cultural, sporting and activity centres scheduled to re-open in June (City of Helsinki, 2020). The *recommendation* to work from home is continued until further notice. The recommendation will be reassessed after summer (end of August) (Valtioneuvosto Stataradet, 2020).

Supporting policies / incentives for working from home

Prior to COVID-19:

- Additional measures are largely not required. Remote working is enabled by employment legislation (in particular the *Working Hours Act*) and the nature of the workforce (Grigorian, 2020). A key reason flexible working is already so successful is a culture of trust. A recent Eurobarometer study (European Commission, 2020) found that Finns' trust in fellow citizens is higher than anywhere else in Europe (Yle, 2018).
- The government has prepared toolkits and guidelines for employers to facilitate remote work practices (Arnis, 2020; Finnish Institute of Occupational Health, 2020). However, benefits are not expressed in terms of trip reduction and travel demand management benefits.

In response to COVID-19:

- The government is accelerating its support of several Finnish start-ups to progress innovative IT solutions to make remote work even easier (Oguilve, 2020). Helsinki promotes the transfer toward a demand responsive transport system and acts as an experiment platform for the commercialisation of new smart mobility services (e.g. Mobility as a Service) enabled by the Act on Transport Services (standardisation of data, open data, inter-operability mandates) and for promoting future technologies. This enables personalisation and rapid response opportunities for responding to changing travel demands and influencing modal choices in real time.
- Helsinki Region Transport (HSL) requests the public to avoid unnecessary use of public transport, so it remains safe for those who are dependent on it. The service also recommends employees work remotely if possible, and that customers who must travel do so outside the hours of 7-9 am and 3-6 pm. As added precautionary measures, bus drivers will stop selling tickets on board the buses and HSL has enhanced the cleaning and disinfection of all modes of transport and stations. The metro and trams services operate on reduced schedules (City of Helsinki, 2020).

New Ways of Working (NewWoW) programme (since 2010)

During the past 10 years, alternative work programmes also known as 'New Ways of Working' (NewWoW) have been introduced in several Finnish knowledge work organisations.

Although the health and wellbeing of employees and improved efficiencies for the companies participating have been the key drivers for the programme, 'sustainability' objectives are starting to feature more in the workplace programme plans (Levin, 2008). These programmes involve:

- location and distribution of workplaces and workers (distributed locations, satellite centres, telecommuting, offshoring)
- building and workplace planning (reduction of square footage, higher densities)
- urban design (higher densities to encourage mass transit and reduce commute times)
- information technologies

- organisational work practices (learning to work remotely with distributed teams).

Results / outcomes

Please note, these results apply to Finland's approach as a whole, rather than one particular policy. Research using labour force census statistics for 2007 (Helminen, 2007) reported:

- Home-based telework reduced the total amount of commuting kilometres by 0.7 percent. Although 0.7 percent appears to be a marginal reduction, in Finland this translates to about 1.35 million kilometres saved per week.
- Only eight percent of the remote working force mentioned avoiding a long commuting trip as the primary motive for teleworking. The most common motive presented was the nature of the work.
- For those with a short commuting distance, the motive to telework is not the distance but other work/life balance issues related to flexibility of working. In rural areas, it offers the opportunity to live in the countryside and work in companies located in central areas.
- Although the potential is evident, the impact of telework on commuting frequency in Finland is still marginal (University of Helsinki, 2020).

COVID-19 behavioural shifts

- As of April 2020, over 75 percent of employees in Finland worked remotely due to the COVID-19 outbreak.
- Around eight percent of respondents in a Statista survey reported that they were working from home more than before (Statista, 2020). At the same time, the COVID-19 pandemic had no impact on remote working for 12 percent of the respondents.

3.1.8 Belgium – Telework ToolBox

Location	Belgium
Timeframe	Legal framework 2005 to present, 2017 to present for the current encouragement approach
Responsible body	Belgian Government

Reasons for implementation

Although Belgium has, by European standards, relatively high rates of working from home, the country's independent traffic safety knowledge group, Vias, recognises telework 'as one of the means of improving mobility, congestion and road safety' (Develtere & Guerry, 2017). Additionally, since 2002 Belgium has been part of the European Commission's framework agreement on telework.

Policy / practice detail

Belgium appears to be implementing a strong combination of legal framework, clear and accessible employer and employee information, and financial incentives to encourage working from home. The encouragement of working from home in Belgium is directly related to perceived transport benefits, both in terms of congestion and road safety. Much of Belgium's focus on working from home is focused on Small and Medium sized Enterprises (SMEs), as these make up most employers in the country (Develtere & Guerry, 2017).

Legal framework

Belgium has implemented both a legislative framework (by way of collective agreement) for working from home (known as telework in Belgium), and significant informational resources/support for businesses to encourage the practice.

Under Belgium's Collective Labour Agreement 85 (2005), work can be allowed at the home of an employee, or at any other place of the worker's choosing. This requires a written agreement and may require a change to the written employment contract if it was not initially included. These written agreements can include times during which employees may or may not telework. The implementation of telework is voluntary (both on behalf of the employee and employer). There are different requirements for telework in the private and public sector.

As of March 2017, 'occasional teleworking' was also included in Belgian employment laws. However, this does not have the same written requirements outlined above.

For formal telework arrangements, employers are responsible for making sure the necessary equipment is available to employees and there is a responsibility to calculate costs of connections and communications relating to the work.

Encouragement tools

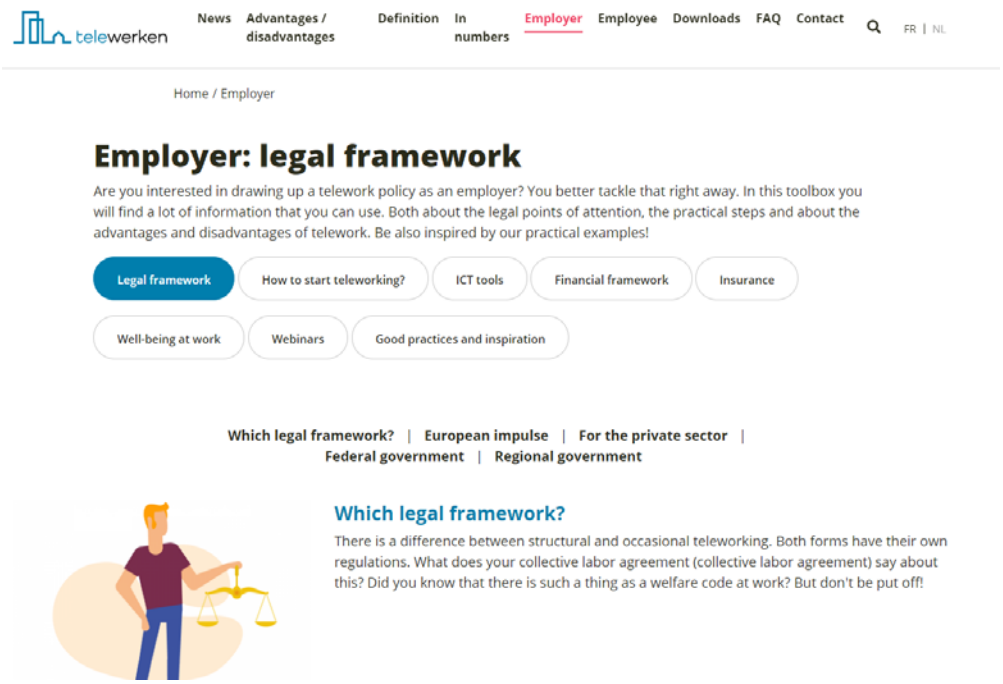
In 2017, a report entitled *Why and how to encourage telework in Belgium* was published by the independent transport research group Vias. This was funded by Belgian Federal Public Service of Mobility and Transport (FPS Mobility and Transport). The report found the requirements for encouraging telework in Belgium were:

- development of a telework culture in Belgium, by way of increasing the visibility of the practice and making it common practice
- encouragement and guidance for companies in their telework policies – by centralising practical information for employers and employees
- the state acting as a good example by offering teleworking to its own employees
- better measurement of telework rates going forward
- encouraging other forms of work decentralisation (e.g. satellite offices)
- encouraging staggered work times
- supporting innovation and technological developments, and
- continuous improvement of the tax and legal framework around telework.

In response to these recommendations, the Belgian Federal Public Service of Mobility and Transport (FPS Mobility and Transport) and the country's independent research hub, Vias, have jointly produced a Telework Toolkit. This appears to have first been published in 2019.

The resulting toolbox is comprehensive and divides information by relevance for employees and employers separately. An example of the toolbox layout is given in figure 3.10.Interestingly, one area this toolbox does not appear to have included is any form of personal engagement with businesses from travel planners. It is unclear why this is not included in Belgium's approach.

Figure 3.10 A screenshot of the legal framework component of the Telewerken ToolBox developed by Belgium's transport authority



Financial incentives

Employers can give a tax-free financial allowance of up to €126.94 to staff who are teleworking, if their teleworking is part of a structured arrangement and governed by a telework policy (Moeskops, 2020). This is included as part of an employee's written employment agreement. This lump sum covers expenses relating to the professional use of a home office, such as water, electricity, heating, and office furniture.

COVID-19 response

In response to the 2020 COVID-19 pandemic, Belgium has relaxed requirements around working from home policies, to enable more people to receive the telework-related financial allowance and encourage working from home. This means that non-formal telework arrangements will receive the same benefits as formal arrangements, without the need for formal evidence of the work from home policy.

This 'Fast Track' application procedure for telework allowances is due to end at the same time as emergency measures in Belgium (Moeskops, 2020).

Working from home in Belgium quadrupled in a week in mid-March, in response to a government directive for businesses to immediately implement teleworking where possible (The Brussels Times, 2020). Failure to comply with the directive means employers will face sanctions, including potential closure (Pecinovsky, 2020).

The Belgian Government has also clarified and updated its position on the availability of social security for workers who are working from home for companies in other parts of Europe (this is particularly relevant for people living near Belgium's border) (EY, 2020). The update enables access to social security for people who are physically in Belgium but remotely working for an overseas company. Previously, such workers would be covered by the social security systems of their workplace locations.

Results / outcomes

Prior to the introduction of the most recent laws around telework, Belgium already had relatively high rates of working from home. In 2005, 13 percent of the population were working from home, at least a quarter of the time or more, which was favourable in comparison to other central European countries (Eurofound, 2010). However, since 2005 there has been a significant increase in the number of people working from home, with this number increasing to 20 percent of workers by 2015 (Gschwind & Vargas, 2019). The most recent numbers provided by the Belgian government suggest that in 2019 one in five commuters were regularly working from home or remotely. The government strongly wants to increase this number, still seeing the country as needing to improve compared to northern European countries, such as Denmark.

3.2 Policies and practices from individual organisations

This section covers policies and practices that have been developed by individual organisations both in the private and public sector; these are:

- Sun Microsystems – Remote Working
- Perpetual Guardian – Four-day working week

3.2.1 Sun Microsystems – Remote Working

Location	55 countries – Headquarters California, United States
Timeframe	1996 – 2009 – the initial project took 24 months to implement.
Responsible body	Sun Microsystems Inc. is a US-based technology firm with 35,000 employees (Sun microsystem was acquired by Oracle in 2009 – this example covers the time leading to that acquisition)

Reasons for implementation

The policy initially began as a means expand Sun Microsystem's workforce at a faster rate than office space could be obtained. Later, the policy was found to be so effective, including financially, that it was considered self-sustaining and has been integrated into wider company culture.

Policy intervention / practice detail

The programme was set up in stages, with small pilots being run initially in two offices, and expanded to international offices once deemed successful (Smart Commute, 2020). It is not clear how long the initial pilot ran for. The Sun Microsystem staff is divided into Open Work categories as follows:

- assigned: 44 percent - stationed at office
- flexible: 48 percent – 'hotelling' (desk space available in offices, but must be booked in advance by employees) and working remotely one to two days/week, limited company provisioning for home
- home assigned: eight percent - primarily work from home, provisioning for home office, hotelling at work as needed (Donaldson, 2007).

Staff are reimbursed by Sun Microsystems for high speed internet, and phone service at home. The amounts vary depending on how much time staff spend working at home.

Sun Microsystems has set up a 'Thin Client' hardware/software solution. This allows employees to access their full desktop and file system from any location over a secure, encrypted network. This system also

prevents data loss and enables collaboration between remote team members. There is no physical data stored on staff devices kept at home. Calls are routed to people's home phone systems.

The organisation developed its own formal performance management system to overcome concerns about lack of productivity by employees, and a multi-year study undertaken by the organisation found people working from home to be significant more productive than those assigned to an office.

Managers have the right to ask workers to return to an office if they are not performing well while working from home, or if a project needs them to physically be in an office. This is usually only for short periods of time.

Results / outcomes

Employees of Sun Microsystems have been reported to save between 2.5 and four work weeks' worth of time in commuting by working from home. The variation in these numbers appears to relate to differing amounts of time spent working from home (Business Wire, 2008) (Smart Commute, 2020).

By working from home 2.5 days per week, employees save more than USD$1700 per year in fuel and vehicle wear and tear (Business Wire, 2008).

An internal study into Sun Microsystem's Open Work environmental effects found that commuting made up more than 98 percent of each employee's work-related carbon footprint (Business Wire, 2008).

A 2010 case study analysing the environmental effects of the Sun Microsystems policy reported that the Massachusetts Department of Environmental Protection documented 173,000 annual vehicle trips saved due to the work from home policy at Sun Microsystems' Burlington, Massachusetts, campus (Workplace Evolutionaries, 2010).

In 2007, Sun Microsystems reported savings of USD$387 million over six years through reduced real estate needs and utility costs (Donaldson, 2007).

3.2.2 Perpetual Guardian - Four-day working week

Location 17 offices in New Zealand

Timeframe March 2018 - Present

Responsible body Perpetual Guardian – Estate Planning Service

Reasons for implementation

The main reason given for implementing a four-day week was a desire to test current perceptions around staff productivity and motivation. There was also recognition that moving to a four-day week could contribute to reducing the effects of vehicle congestion both on Auckland as a city, and on employees.

Policy intervention / practice detail

Initially, an eight-week trial of a four-day week was undertaken, starting in March 2018. The trial involved all 240 staff around New Zealand and sought to test productivity, motivation and output by changing the work model to give every staff member a paid day off each week. All other employment conditions, including remuneration, remained unchanged – so staff worked 30 hours but were paid for 37.5, and were asked only to deliver the same amount of output as in a standard week (Coulthard Barnes & Perpetual Guardian, 2019).

Staff were encouraged to collaboratively develop plans for completing work in a reduced timeframe. This included allowing plans for staff to take different 'rest days' to allow customers to continue to have access to personnel during standard business hours.

Staff were instructed to not turn on out of office replies, and to set up systems that would forward urgent emails to someone else who could deal with the contact if it arrived on one staff member's 'rest day' (Coulthard Barnes & Perpetual Guardian, 2019).

From November 2018, the policy has been implemented on a long-term basis. Staff can complete an 'opt-in request form', which asks staff to outline their productivity measures, time management approaches, and the days they will take off. Staff are also required to agree to certain conditions, including that if their productivity is negatively influenced, they could have the policy redacted.

Employees also agree, as part of the form, to remain available to attend work or pick up calls/emails at short notice if necessary.

Perpetual Guardian's advice for other organisations seeking such a policy includes:

- prepare useful guides and frequently asked questions for managers and employees that outline as many scenarios and areas that require clarity as possible
- recognise the influence of different work patterns, such as seasons, on the policy
- understand that there are times when the policy will not be suitable, with end-of-year reporting being cited as one example
- provide contact points for staff feeling stressed about the change.

Results / outcomes

Outcomes reported from the eight-week trial, analysed in partnership with Auckland University and Auckland University of Technology, include (Coulthard Barnes & Perpetual Guardian, 2019):

- job performance being maintained across four days instead of five
- a lowering of reported staff stress levels (pre-trial: 45 percent, post-trial: 38 percent)
- work-life balance – self-reported 24 percent improvement from individuals
- significant improvement in team engagement
- a 35 percent drop in use of the five most popular non-work websites during work hours.

The individual experiences of personnel at the organisation varied, and staff did report increased hours worked across the four days, which was not the intent of the policy.

Andrew Barnes, the chief executive of Perpetual Guardian at the time the policy was implemented, has associated the policy with having the potential to remove 20 percent of staff commuting journeys from the road (Barnes, 2018).

While this is not an example of remote working, it has been included as an example of a policy with capacity to reduce commuting journeys.

3.3 Work from home encouragement and practice relating to significant disruption

This section covers policy interventions that have been developed in response to significant disruptions, including:

- The London 2012 Olympics

- University of Canterbury – Post-Earthquake Remote Learning Response

3.3.1 London 2012 Olympics

Location London

Timeframe 2012 Olympics (business engagement from 2010 – 2012)

Responsible body Transport for London (TfL)

Reasons for implementation

The 2012 Olympics was considered the UK's 'largest peacetime logistical exercise' and was expected to put significant strain on London's transport system, both in terms of public transport and the road network (BBC, 2011). An additional nine million visitors to London were expected for the course of the games and the city's transport system was already operating at near capacity (Jones, 2015).

Previous Olympic Games had seen negative outcomes as a result of over congested street and public transport networks. The 1996 Atlanta games saw people waiting for up to nine hours to access public transport services, and some athletes nearly missed events due to transport delays (Jones, 2012).

Extensive planning, infrastructure investments and TDM interventions were undertaken by TfL to manage the transport system during the games. Work from home initiatives were part of the toolkit and were encouraged during this time, as a means by which to reduce congestion, with large businesses believed to be particularly influential in this regard.

Policy intervention / practice detail

The London 2012 TDM programme was multi-faceted, with a range of target groups considered important in shifting baseline travel demand ahead of and during the Olympic Games. A major part of the programme was work undertaken to encourage businesses to allow employees to either work from home or stagger their hours to reduce 'base load' on the city's transport network.

The programme included significant spending on transport infrastructure schemes and public transport service enhancements, but there was a recognition that travel behaviour change measures were needed to complement this work. The London TDM policy cost an estimated £30 million and was the largest in Olympic history. A further £15 billion was invested in transport infrastructure projects related to the games (Jones, 2015).

The TDM programme included a marketing and awareness campaign and an 'advice to businesses' campaign, which sought to encourage increased levels of working from home.

The business-related aims of the programme were:

- manage expectations (setting reasonable passenger and business expectations about delays)
- encourage non-games travel to change (i.e. change modes, travel times, or decisions to make journeys at all)
- work closely with the business community to reduce background demand and allow for ongoing business continuity.

The latter two of these aims specifically included efforts to promote the consideration of working from home as an option during the games.

To encourage changes to travel times, modes and decisions not to travel:

- web-based and posted advertising gave businesses details of the games and information about restrictions on the city's roads (an Olympic Road Network, only for Olympic-related traffic was created during the games and reduced the capacity for other traffic)
- online visualisations clearly articulated expected volumes on public transport at different times of the day
- over 42,000 information packages were posted to London businesses, and over a million newsletters were sent to businesses, letting them know about the games and what the transport challenges would be during this time.

TfL worked closely with the business community, with large businesses believed to be influential in this regard (BBC, 2012):

- presentations and workshops were held – with 21,786 businesses attending presentations by TfL about the upcoming games
- TfL transport planners physically visited businesses to help plan strategies for the games. Approximately 20,000 smaller and medium sized employers at 'games hotspots' were visited by TDM representatives. Different approaches were taken for businesses of different sizes (Springett, 2012):
  - *Large businesses (those with 2500 staff or more)*

    In recognition of the fact that there are many large businesses in London and that targeting these would be crucial to generating larger shifts in behaviour, TfL undertook tailored travel planning advice based on the needs of individual large businesses, indicating that large organisations should either 'buy in' to changes for the games, or risk significant disruption. TfL communicated the need for the leaders of large organisations to communicate alternative work arrangements, where possible, with staff. Businesses were provided with toolkits, case studies and video seminars around the concepts of 're-mode, re-time, re-route'.
  - *Medium sized businesses (undefined size)*

    TfL engaged third parties to run workshops for medium-sized businesses communicating the approach to enable businesses to keep running, despite expected disruption. The presentations presented modelling of what would happen in terms of congestion if businesses did not help change the base load of travel demand, including anticipated delay times. In particular, the presentation showed a 'shock' image of the outcomes of the 1996 Atlanta Olympics, figure 3.11, when people had to wait up to nine hours to access public transport. Medium sized businesses subsequently interviewed have stated this image made them realise 'God, we have got to do something!' (Jones, 2012). Businesses were provided with access to the same tools as the public, in particular the Get Ahead of the Games website, which provided resources on pinch points, traffic visualisation and advice on working from home.

    Research into business engagement with both large and medium-sized businesses has found that: 'The clear message from the presentation was that the problems that occurred due to poor transport planning at past Olympics, in particular Atlanta 1996, would not happen if businesses engaged with TDM measures to reduce, retime, re-mode, and reroute.' (Jones, 2015)
  - *Small business (believed to be mostly owner-operated type businesses, smaller stores etc)*

    Initially, limited engagement was made with small businesses. Eventually, after contact from concerned business owners, TfL approached small businesses in person to provide information about the travel restrictions and expected demand. This proved useful in dispelling panic from

media reports which had exaggerated the scale and duration of proposed road network closures and allowed small businesses to plan travel changes.

Figure 3.11 Eight-hour public transport delays during the 1996 Atlanta Olympics. This image was shown to businesses to emphasise the need for travel behaviour change during the games. (Jones, 2015)

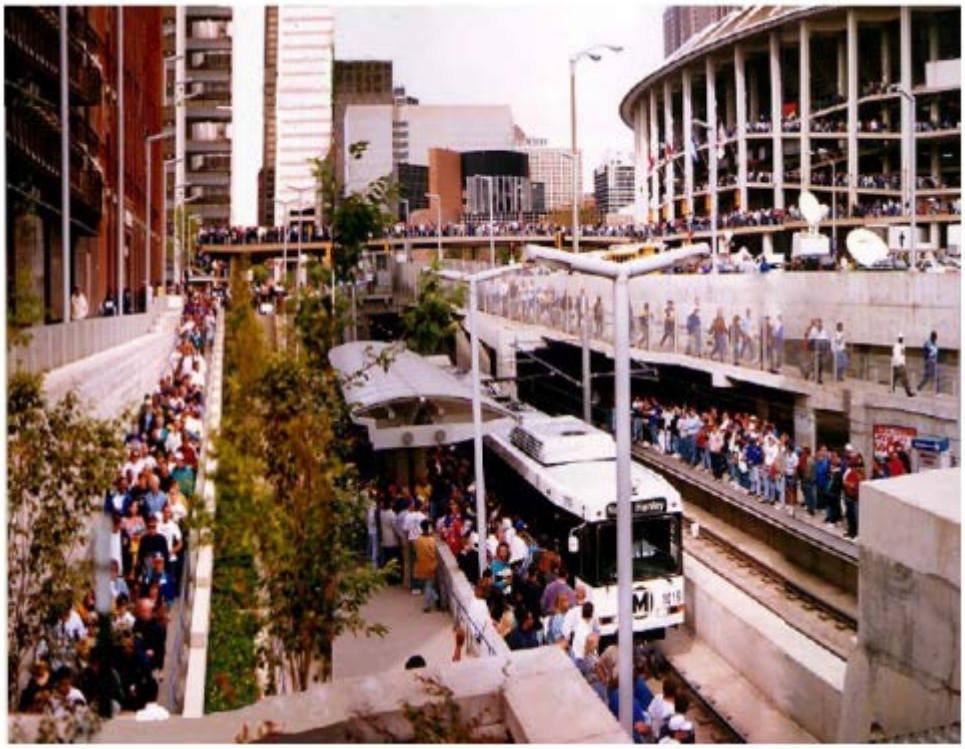


Figure 3.12 below outlines the timeline of advice given to businesses in the lead up to the 2012 Olympics in London. This timeline conveys the complexity of the task and gradual build up to the most intensive period that commenced in January 2012, seven months before the games started.

Figure 3.12 Timeline of advice given to businesses ahead of the 2012 Olympics
Source: https://cris.brighton.ac.uk/ws/portalfiles/portal/366942/s4.pdf

Travel Advice to Business Timeline

Date Activity Started	Business Activity
November 2010	Travel Advice to Business Toolkit—online information service for business.
November 2010	Site-specific advice program—a specialist one-to-one advice service for larger organizations with operations in identified hotspot areas; 533 companies signed up for this service, accounting for over 611,000 employees. Presentations held by third parties and business intermediary groups; 333 presentations held, attended by 19,500 businesses. Launch of "Keep on Running"—business information and awareness campaign.
July 2011	Workshops held for SMEs; 140 workshops were held and attended by 2,850 businesses.
January 2012	Intense program of travel advice to businesses and freight—mail drop to 45,000 businesses in central London. Door to door leafletting; 25,000 SMEs in priority hotspots. 21 drop-in centers set up; 965 businesses made use of them. Travel Advice to Business (TAB) newsletter; sent out to 10,000 business and business intermediaries.

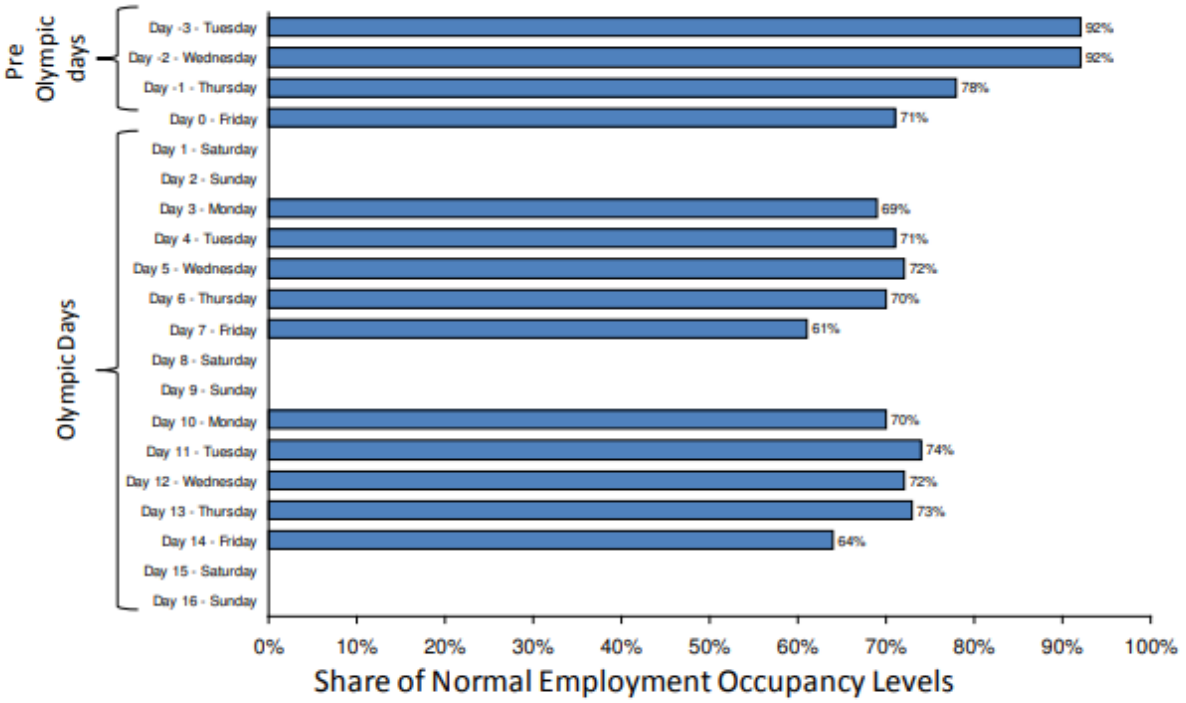
One tool which was identified as a potential success factor for TDM during the games was labelled 'The Big Scare'. This involved influencing travel behaviour through the reinforcements of natural apprehensions local people may have about how 'chaotic' the transport system would be during a certain event. This relied on media attention being focused on the upcoming problem of traffic and transport congestion. Some academic reporting identifies this as a success factor for engagement of businesses in travel behaviour change in London, but this has not been acknowledged as an official policy (Jones, 2015).

Results / outcomes

During the 2012 Olympics, it was estimated that one-and-a-half million British workers worked remotely (Mackay, 2017).

The London TDM programme for the Olympics was reported as being highly effective, with road travel reducing by 10 to 30 percent. Business travel data was collected as a part of follow-up research to the programme. This reported a 30 percent reduction in physical employee attendance to offices surveyed. Figure 3.13 below gives an indication of the difference in employee attendee levels at offices in the London business district of Canary Wharf during the games.

Figure 3.13 Major employment site attendance during the 2012 Olympic games in the Canary Wharf area of London. Source: http://www.wctrs-society.com/wp-content/uploads/abstracts/rio/selected/782.pdf



Note: Major office based employers – Canary Wharf Area
Source: Business Consultations

Subsequent analysis suggested businesses' level of travel behaviour change implementation depended on the amount of engagement by TfL. Opinions reported about the programme have ranged from businesses being completely supportive of changing – either through encouraging staff to work from home, or through staggering work hours – to businesses being unwilling to change but hoping that others would make suitable changes to ensure their own staff were unaffected (Jones, 2015).

Additionally, TfL reported that 'One of the key reasons the transport network operated so smoothly during the London 2012 Games was that businesses and many Londoners followed the advice of TfL, London 2012 and transport partners to change the way they travelled during the Games, thereby avoiding the busiest times and places. (Transport for London, 2012)'

There is little data available around the longer-term effects of the Olympic disruption to remote work in London. A 2013 survey undertaken by telecommunications company BT interviewed 600 large private and public sector organisations across the UK to determine legacy effects of the games. Of this group, 34 percent were seeing continued benefits from flexible working practices brought in for the 2012 Olympics. Additionally, 62 percent thought the preparation for the Olympics offered lessons for them which would be relevant in coping with disruption in the future (BT, 2013). Based on government labour surveys, as of December 2019, 5.5 percent of London workers regularly work from their own home, and 32.1 percent of London's workforce had ever worked from home. In the week before the survey, 16.4 percent of London-based workers interviewed had worked from home in some capacity. These rates are higher than the UK average, but not significantly (Office for National Statistics, 2019).

3.3.2 University of Canterbury – Post Earthquake Remote Learning Response

Location Christchurch, New Zealand

Timeframe 2010 – 2013, some elements are ongoing

Responsible body University of Canterbury

Reasons for implementation

The 2010 and 2011 Christchurch earthquakes resulted in a sudden and dramatic change to the way the University of Canterbury (UC) conducted its education programmes. UC set up a website called UC Restart that kept staff and students updated with the latest developments after the earthquake and how learning would move online.

Policy / practice detail

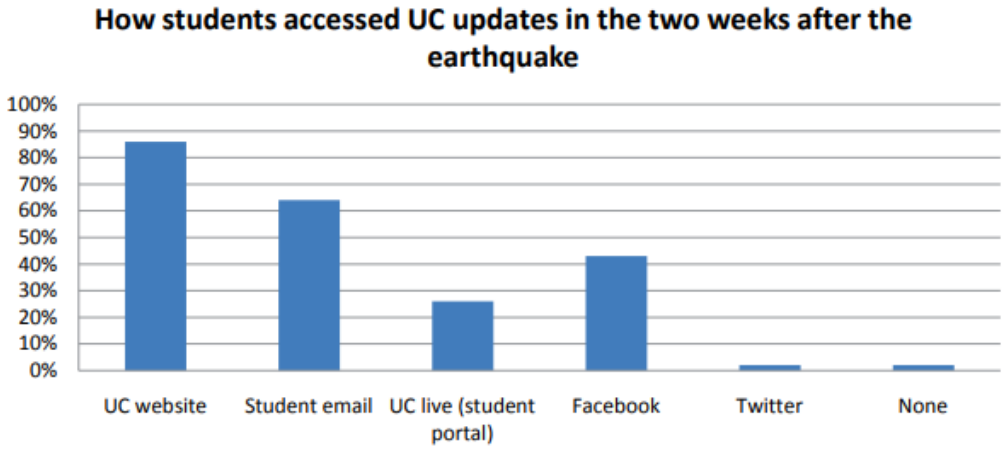
UC is in Upper Riccarton around four kilometres west of the Christchurch city centre. In 2010 the University had approximately 22,000 students and 3,000 staff (Seville, 2011).

Fortunately, for the two years before the earthquake the University already had an online learning system in place, and they had a dedicated e-learning support team. Immediately after the earthquake, UC increased the server capacity and gave the Learn system used for online learning priority support over other systems. However, at the time of the quake, most of the academic staff had limited experience and knowledge of using Learn and other e-learning systems.

After the earthquake UC responded quickly:

- The e-learning support teams quickly provided short courses and tutorials for academics on how to convert to an e-learning platform.
- UC achieved moving almost all course content and learning to an online environment in only a few weeks in what would normally take a year of planning and implementation.
- UC used other technology shortly after the earthquakes to support online learning. AdobeConnect, which had been available for web conferences since 2007, was centrally supported after the 2010 seismic event, and Echo360, a video platform designed for higher education, was added in July 2011 for capturing lectures (Ayebi-Arthur, 2017). Echo360 provided use of the system free of charge out of compassion for the devastating impact that the earthquakes had on UC and Christchurch.
- Social media became a useful tool for the university to communicate with students both directly after the quake and for ongoing support as they worked from home. In 2011 UC mainly used Facebook along with their UC Restart website as shown in figure 3.14.
- The university used the Vice Chancellor in many of their communications about moving to an online learning environment to add weight and importance to the message (Ayebi-Arthur, 2016).

Figure 3.14 The social media methods that students used for accessing updates from UC



While the university opened towards the end of the first semester in 2011, many students were not able to attend classes. This was because the damage to housing and the ongoing after-shocks meant that many students had left Christchurch in the months after the February 2011 earthquake. This made it more important that academics maintain strong channels of communication and update online learning systems with all relevant material for distance learning.

The consequence of the earthquakes and the subsequent rapid adoption of e-learning at UC was sustained and led to the development of an e-learning plan by specific university colleges (such as the College of Business and Law) in 2013 (Ayebi-Arthur, 2017). In particular, this plan led to the College of Business and Law-making use of e-learning for all large classes, especially those in level 100 (first year).

Results / outcomes

There is no doubt that having online capability and support in place before the earthquakes helped UC to maintain its operations. Clear channels of communication were key to ensure that staff and students were getting regular updates and information to support their sudden move to online learning and teaching environment.

Many of the technological interventions that were put in place during the crisis have subsequently been embedded and integrated into normal practice (Seville, 2011). Examples include:

- the use of course recordings through Echo360, and video conferencing via Adobe Connect. This has prepared the university well for future academic resilience
- the university now provides a dedicated e-learning support team for both academic staff and students. Flexible Learning Advisors provide support and orientations of available technologies (Canterbury, 2020).

Following the Christchurch earthquakes, initial travel impacts on students were significant, with the university campus closed completely and all students initially learning remotely (Mackey, 2012). Subsequent analysis of mode share access to the campus has found a change of individual travel patterns of students, but no evidence of significant change at an aggregate level. This analysis did not include detail of the number of students choosing to learn remotely on an ongoing basis because of the earthquake disruption.

4 Surveyed business practices – Remote.co

Remote.co is an online resource for companies considering work from home. The site seeks to provide best practice, insight and support for organisations wanting to encourage employees to work from home.

As part of its research, the organisation has asked a series of 37 questions to 141 companies who have a work from home set up. The questions cover reasons for working remotely, hiring remotely, management protocols, remote working policies, and personal insights from staff.

A selection of answers deemed particularly relevant for this research note have been directly quoted in this research in the section below. Further information can be found at https://remote.co/qa-leading-remote-companies/.

- **What is the hardest part about managing a remote workforce?**

  Organisation: Answer Connect
  Location: Portland
  Business Type: Call answering service
  Answered: March 2016

  The majority of people who wouldn't recommend remote work are primarily working remotely, but they're not on a fully remote team. Middle management difficulties: Balancing socializing in a virtual workspace with not working in a silo. When working remotely, it's so easy to either block out everything and become isolated, or get so caught up in the various conversations taking place that it becomes a challenge to focus. This is especially true because online conversations are archived and readily available, unlike, say, missing the morning banter around the coffee maker. - 1Password, a password manager that keeps you safe online. When you cease seeing a person all day, every day, you have to develop new ways to determine if they are present and working hard. You also need to learn how to connect, engage and build rapport when there isn't a real water cooler to create chance encounters. These things are tough.

  Organisation: Appirio
  Location: 100 percent remote
  Business Type: Call Global Service Company

  The toughest part about managing a remote workforce is making sure everyone feels connected to the team and culture of Appirio. We work very hard to have local team events, virtual events, and constant video meetings; however, it can still be difficult to ensure everyone feels connected. Since you don't see your team members in the office on a regular basis you may not always know what is going on in their day to day so it is crucial to find ways to stay in touch regularly.

- **What are the most effective tools for remote team communication?**

  Organisation: Acceleration Partners
  Location: 100 percent remote
  Business Type: Customer Acquisition Programs
  Answered: December 2019

  Skype, Video Conference, Basecamp/Asana, and of course Email. We also use tools like Tinypulse for soliciting consistent feedback and sending "cheers" to team members.

Organisation: Dell
Location: Headquarters- Texas, US (18 percent remote)
Business Type: Computer company
Answered: February 2020

Monthly town-halls via zoom, Team meet-ups, Daily slack - Articulate, Inc.- Online training software. There are several modes that the team uses: instant messaging, online meetings, team meetings, project collaboration, or email.

Organisation: Flexijobs
Location: 100 percent remote
Business Type: Job service for remote and other flexible job listings
Answered: February 2020

We have a few different platforms and standards for communication. First off, each team has weekly meetings to discuss progress on various projects and what things are happening in other areas that might impact them. Also, managers have regularly scheduled one-on-one meetings with their direct reports to find out how they are doing and what they need to be more successful. In terms of platforms, we use Sococo as our virtual office environment. I can't say enough about how great this has been for us. With person-to-person and group chats, as well as the ability to talk or have a video call with people has allowed for more natural and impromptu conversations. We also use Yammer as a knowledge database and a virtual water cooler of sorts. We ask questions designed to spark conversation. We post facts that team members share with us, allowing people to get to know more about one another and find common ground. We also have different interest groups like a Pet Corner and a No Guilt Book Club for people to bond over. Finally, we celebrate things like work anniversaries, birthdays, new babies, and personal accomplishments there. It's a great resource for keeping people connected.

- **What is your BYOD (Bring Your Own Device) policy for remote workers?**

Organisation: 10up Inc.
Location: 100 percent remote
Business Type: Websites and content management company
Answered: December 2019

We offer employees a notable equipment stipend to be used for purchasing company assets when they start ($2,000 for technical production like designers and engineers, $1,500 for "business" staff like project and account managers). It refreshes every 2 years ($1,500 for technical, $1,200 for business), and the budget can rollover. Employees who prefer to own their own gear are offered 50 percent of the unused stipend as bonus pay at the end of the period (every 2 years). They can use the stipend to buy whatever equipment they choose, so long as it meets a basic, reasonable set of criteria for a distributed company: not highly personally (say, a hello kitty laptop sleeve) and relatively easily transferable upon any exit (not an elaborate desk or bookshelf).Generally, we strongly encourage employees to use the stipend to buy a company machine (employees are required to own a portable computer), but ultimately, let them make that decision. There are some clients for whom it is a requirement, and our employment agreement is very clear that employees must remove any proprietary / confidential company and client information from their devices upon any exit.

Organisation: CloudPeeps
Location: 100 percent remote
Business Type: A talent marketplace that matches businesses with the world's top freelance marketing, content and community professionals
Answered: January 2020

As a small team, we don't have an official policy yet. We have a small percentage of the team with company-purchased devices (with a buy-back option indexed over time) and the rest on their own. Even as we scale, I'm unsure if we will provide devices. I've spoken to a few people about this and many say they end up with two laptops, one they don't use. With much of our data being cloud-based with easily editable security permissions, I think providing devices is less relevant as time goes on.

Organisation: Wordreference
Location: 100 percent remote
Business Type: Security plugin for WordPress company
Answered: February 2020

We provide all hardware and software. Just because you have remote employees does not make it OK to not provide everything they need. Our policy is to provide the best available equipment and whatever our team needs. So far most of our team has MacBook Pro's with all the best features – a few use external displays we've provided. We provide awesome headsets, all other peripherals and can provide office furniture when needed

5 Conclusions and key themes

This policy and practice review has reported on case studies from a range of organisations, private companies, and governments (both local and national) on the topic of work from home practices. This is a high-level analysis only and should be treated as such.

Both a review of academic literature and current practice indicates there is no single approach to increasing the number of people working from home. The practice of working from home has, compared to forecasts, grown relatively slowly and there is a significant body of research trying to understand why. The main barriers to working from home relate to ingrained workplace cultures and management. Despite this, various case studies analysed in this review appear to have been successful in increasing work from home numbers. Work from home has, since the start of 2020, seen a significant increase due to COVID-19 related restrictions. The longer-term effects of this disruption will, no doubt, provide significant insights into this topic in the future.

The following three tables synthesise the key insights and trends identified from this high-level review. These tables are categorised based on observed success factors, barriers and other areas that require consideration.

Table 5.1 Successful approaches for encouraging/enabling working from home observed from case studies

Successful approach	Key insights	Relevance to New Zealand	Relevant examples
Programmes to support businesses in establishing work from home	• Usually set up and funded by government • Extensive and free online materials • Consultants available to offer specific advice to businesses • Need to be kept up to date and accompanied by other measures	• Can be tailored to suit particular needs (such as COVID-19 response) • May not require internal government staff resources to undertake, providing advice can be outsourced • Suitable to target particular industries	• Section 3.1.1 Minnesota (eWorkplace programme) • Section 3.1.2 Virginia (Telework!VA programme) • Section 3.3.1 London (2012 Olympic business engagement programme) • Section 3.1.3 New South Wales (Travel Choices) • Section 3.1.6 Telework Toolkit
Work from home legislation	• Can require employers to provide a certain percentage of work from home hours • Can apply to specific organisations (eg government agencies)	• Longer-term solution to back up other approaches to encouraging and enabling work from home • Current work from home climate likely to provide valuable information to feed into such legislation	• Section 3.1.5 Finland (Working Hours Act) • Section 3.1.2 US (Telework Enhancement Act) • Section 3.1.6 Belgium (Collective Labour Agreement) • Section 3.1.1 Singapore (during COVID-19 restrictions)
Remote hubs	• Providing locations to allow people to work remotely when their home set up is unsuitable • Often used for people with the longest commutes	• Opportunity to use space made vacant by restrictions on other activities • May address equity issues for people without suitable home office set ups or limited internet connections	• Section 3.1.3 Queensland (Distributed Work Centres Initiative)

Successful approach	Key insights	Relevance to New Zealand	Relevant examples
"The Big Scare"	• Generating buy-in from businesses through public messaging about the concerns around congestion and traffic	• Potential for a quick to implement communications strategy based around genuine congestion-based concerns • Potential to also build communications around the reduction in emissions relating to COVID-19 restrictions	• Section 3.3.1 London (2012 Olympic business engagement programme) – note that this is not an official policy, but an academic interpretation based on a real example
Payment of relevant staff expenses	• Payment of internet bills for when staff work from home • Provision of ergonomic work set up at home (eg chairs, desks)	• Payments would be relatively easy to set up compared to some policies	• Section 3.2.1 Sun Microsystems • Section 3.1.6 Belgium
Government agencies requiring staff to work from home	• As large employers, government agencies/departments have capacity to trial working from home practices internally	• Internal policies at government/council/local government level may provide practice examples to other organisations.	• Section 3.1.2 US Federal policy • Section 3.1.3 Australia

As outlined previously, this analysis sought to understand examples of success in encouraging or enabling staff to work from home. Due to this, the case studies selected generally saw an increase in staff working from home, and no case study reported decreases. However, there were aspects of policies or practice that were cited or observed as barriers to working from home. These are outlined in table 5.2 below.

Table 5.2 Unsuccessful approaches or barriers to working from home observed in case studies

Unsuccessful approach/barriers to success	Key insights	Relevance to New Zealand	Relevant examples
Publication of guidance without other supporting policies	• More than one example had to adapt their approach after finding written advice alone was insufficient to generate significant increases in work from home behaviour	• Suggests the importance of a multi-prong approach • Government programmes to encourage working from home should not rely only on written guidance.	• Section 3.1.1 Singapore • Section 3.1.2 US Federal Policy
Ad-hoc work from home protocols	Case studies without either clear programmes or legislation appear to have had the least success	• Approaches for encouraging working from home in New Zealand should be reviewed regularly for consistency and effectiveness	• Section 3.1.2 US Federal Policy
Failure to include management concerns in policy	• Management concerns about productivity and control were, across the board, a major barrier to increased levels of working from home	• Short term policies or approaches should include a strong focus on management concerns	• Section 3.1.1 Singapore • Section 3.2.2 Perpetual Guardian (as an example of new ways to manage productivity)

Lastly, table 5.3 below outlines areas that, from this high-level analysis, were not identified as having strong evidence for either being clearly successful or not. This table also outlines factors that may be relevant only in select circumstances. These are considerations relevant to policy or practice in New Zealand.

Table 5.3 Other factors to consider in terms of working from home policy and practice in New Zealand

Policies/factors to consider	Key insights	Relevance to New Zealand	Relevant examples
Financial Incentives / assistance	• Can come in the form of incentives for staff, tax breaks, or payments to businesses • Not a clear indication that this works on its own, but is generally a proven travel demand strategy • Utilised by many case studies in this analysis but always accompanied by other measures, so it is hard to determine the role this played in encouragement	• Likely a quick-to-implement policy that could have positive short-term effects • In the longer-term, better to be used alongside other measures, such as providing business information and support	• Section 3.1.1 Singapore • Section 3.1.2 Virginia • Section 3.1.4 UK and Ireland (tax relief) • Section 3.1.3 Australian Tax Office “shortcut” • Section 3.1.6 Belgium
Four-day work week	• Does not directly encourage work from home, but has the capacity to reduce travel to a physical office (up to 20 percent) • Productivity reported to have stayed the same in case study examples. • Popular with staff	• New Zealand has a well-defined case study of a large organisation implementing this policy • Can be implemented individually by organisations but could be promoted by government agencies	• Section 3.2.2 Perpetual Guardian
Working from home as a ’perk’	• Working from home is generally popular among employees if employers make the practice available • This is not a direct encouragement technique, but can be harnessed in communication of the concept	• Short term focus is most likely best placed on employers, not employees • Human Resources and Health and Safety needs should be well understood by employers	• Section 3.2.3 Auckland Council • Section 3.2.2 Perpetual Guardian
Disruptive events generate new ways of behaving	• In case studies where working from home was used as an approach to deal with disruption, engagement from businesses was high • The longevity of the initiatives implemented during disruptions was very mixed and there was limited follow up research as to whether some changes lasted after the event was over	• New Zealand is at a disruptive point in time where introduction of new technologies or systems may be more accepted than usual	• Section 3.3.2 University of Canterbury • Section 3.3.1 London (2012 Olympics)

Policies/factors to consider	Key insights	Relevance to New Zealand	Relevant examples
Suitability of businesses and roles	• Not all workforces are suited to working from home, and some roles lend themselves to the practice more than others • Some case study examples focused on the particular businesses they knew would be relevant or productive in furthering work from home practice	• Understanding which organisations are best placed to enable work from home is important when considering how to target encouragement	• Section 3.1.6 – Belgium • Section 3.3.1- London Olympics

Through understanding practices and policies of other jurisdictions and organisations, New Zealand has the opportunity to develop its own approaches to encouraging work from home. This is especially relevant as the country moves out of COVID-19 restrictions, and as both employers and employees seek to understand their options in this space in the future.

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