Monumentalizing Infrastructure: Claudius and the City and People of Rome

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Dissertation submitted in partial fulfillment of
the requirements for the degree of Doctor
of Philosophy in the Department of
Classical Studies in the Graduate School
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2019

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Abstract

"Monumentalizing Infrastructure: Claudius and the City and People of Rome" is a comprehensive study of public infrastructure in Rome under the emperor Claudius (41-54 CE). Recent scholarship has targeted Claudius' reign as an important moment in the development of the Roman Principate. Overshadowed in the scholarship by Augustus' transformation of Rome from a city of brick to marble, Claudius' projects centered on providing protection from floods, fires, and diseases, and assuring the availability of enough clean water, food, and means of transportation. Building a large marble temple certainly made a symbolic and aesthetic impact, but nearly doubling Rome's water supply must have meant more to the common person living day-to-day in the city. By focusing on Claudian infrastructure initiatives and using GIS to map and contextualize this work, this dissertation interrogates traditional scholarly approaches to Roman imperial building and ancient urban planning.

Following a survey of the ancient sources for Claudian building in Rome in Chapter 1, Chapter 2 examines the practical measures put in place to secure and advertise the steady supply of affordable grain to the city. Many have explored the convoluted history of the grain supply in Rome. I do not replicate such studies, whose findings have not been changed by any significant new discoveries, but instead I focus

on how the labors put in to improve and advertise such improvements to the food supply of Rome under Claudius changed and shaped the urban landscape.

Chapter 3 centers on water and its distribution in the city. I use archaeological, epigraphic, and literary evidence to assess Claudius' effects on Rome's water supply. Visualizing these changes lets us consider building as a process, and see what disruption, repair, and construction of aqueduct lines did to water distribution to particular regions of the city. The maps suggest that Claudius improved the potable water supply in areas where the poorer population of Rome lived.

Chapter 4 addresses boundary marking and road building—the visual and practical changes made to the organization of and movement in the city. Organizing the boundaries into and out of the city facilitated the urban development of areas along the banks of the Tiber river. The visualization in this and other chapters allow us to see much more clearly than before, and emperor's impact upon the general populace and obtain a clearer picture of the city's urban history.

My compilation and analysis of the evidence reveals a thorough revision of Rome's infrastructure under Claudius, despite his common denigration as an ineffectual buffoon or a puppet of his wives and freedmen. This dissertation provides a new framework for examining imperial building in Rome. The infrastructure projects that made all other construction possible are at the forefront. The negative aspects of

Claudius' character portrayed in the literary sources are counterbalanced or at least nuanced when a focus on infrastructure and care for the people provides a different viewpoint. An emperor's popularity and legacy among the people would not be measured by jealous quarrels among the aristocracy. The imperial government was not merely reacting to crises, rather it was proactively seeking long-term solutions.

Dedication

I dedicate this dissertation to my husband John, who has been an endless source of support through this entire process.

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List of Abbreviations

Throughout this dissertation, I have used the *Oxford Classical Dictionary, 4th Edition* abbreviations for referencing ancient texts. For periodicals, I follow the abbreviations from *L'Année Philologique*. Additional abbreviations are listed below.

AE	*L'Année Epigraphique*. 1888-.
CIL	*Corpus Inscriptionum Latinarum*, ed. Th. Mommsen et al. Berlin: G. Reimer, W. De Gruyter, 1863-.
ILS	*Inscriptiones Latinae Selectae*, ed. Herman Dessau. Berlin: Weidemann, 1892-1916. Reprinted Chicago: Ares, 1979.
LTUR	*Lexicon Topographicum Urbis Romae*, vols. 1-5, ed. E. M. Steinby. Rome: Edizione Quasar, 1993-2000.
PIR^2	*Prosopographia Imperii Romani Saec. I. II. III. Pars viii, Fasciculus* 1, W. Eck, M. Heil, and J. Heinrichs (eds.). Berlin/New York: Walter de Gruyter, 2009.
RIC 1^2	*Roman Imperial Coinage*, Volume 1: *From the death of Caesar to the death of Vitellius*, Revised edition. London, 1984.
RIC 2	*Roman Imperial Coinage,* Volume 2*: Vespasian to Hadrian*. London, 1968.
SCPP	*Senatus Consulto de Pisone Patre.* W. Eck, A. Caballos, and F. Fernández (eds.). 1996. *Das senatus consultum de Cn. Pisone patre. Vestigia 48.* Munich: Beck.
Thylander	*Inscriptions du Port d'Ostie, Vols. I and II.* H. Thylander. Lund: C. W. K. Gleerup, 1952.

1. Introduction: Constructing Claudian Rome

1.1 Introduction

As the first emperor born outside of Italy and a member of the imperial family excluded from a political career until he was 47 years old, Claudius had something to prove when the Praetorian Guard named him emperor following Caligula's assassination in 41 CE.[1] Although Claudius' thirteen-year reign brought Rome military victories and major infrastructure improvements, ancient writers, like Suetonius and Seneca the Younger, overshadowed these achievements by focusing on depicting him as the feeble puppet of his wives and freedmen.[2] These ancient literary assessments heavily influenced historical interpretations of Claudius into the 20th century. Theodor Mommsen, perhaps the most prominent Roman historian of the 19th century, described Claudius as an apolitical person "with no will of his own," whose reign was "of little general interest."[3] More recent biographical monographs, by scholars like Arnaldo Momigliano in 1934, Barbara Levick in 1987, and Josiah Osgood in 2011, have generally rehabilitated Claudius' image. These revisionist views, which survey Claudius's

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[1] Hereafter all dates are CE (Common Era) unless specified otherwise.
[2] Halfway through the *Life of Claudius,* Suetonius writes that all of the good Claudius did for Rome and the Empire really came from his wives and freedmen (*Claud*. 25.5: *sed et haec et cetera totumque adeo ex parte magna principatum non tam suo quam uxorum libertorumque arbitrio administravit*). The *Apocolocyntosis*, a satire written after the death of Claudius and attributed to Seneca, casts the former emperor as a fool.
[3] Mommsen, republished in 1992, 157-58.

political, economic, and military work on an empire-wide scale, have opened additional avenues for research on individual aspects of the period.

In their recent works, Annalisa Tortoriello and Anne-Claire Michel have nuanced our understanding of Claudian political culture. Annalisa Tortoriello's reconstruction of the consular lists and Anne-Claire Michel's analysis of the imperial court use epigraphic evidence and prosopographical analysis to show convincingly that Claudius possessed a sharp political acumen. The ancient literature exaggerated the hostile connection between the emperor and the senatorial order.[4] Claudius respected the political hierarchies in place while shaping his relations with the senate and the imperial court. Despite a clear consensus that some of the emperor's best work was connected to his public-work projects,[5] no comprehensive study of Claudius' public building in the city of Rome has yet been published.

The lack of studies on Claudius' building in Rome stands in contrast to the numerous monographs and articles on building there during the Augustan period (27 BCE – 14 CE), like Lothar Haselberger's Mapping Augustan Rome project, Diane Favro's *Urban Image of Augustan Rome*, and Paul Zanker's *The Power of Images in the Age of*

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[4] Tortoriello 2004; Michel 2015.
[5] In the primary sources, see Plin. *HN* 36.122-25 (quoted and translated on p. 110-11) and Suet. *Claud*. 20. In the secondary sources, see Levick 1990, 109-14 and Osgood 2011, 168-89.

Augustus,[6] to name just a few. In-depth studies on the building programs of individual dynasties and emperors have proven fruitful contributions to the discipline, such as R. Darwall-Smith's on the Flavians, Mary T. Boatwright's works on Hadrian, and Susann Lusnia's on the Severans.[7] Such works have shown that through architecture and infrastructure an emperor could radically transform the capital city as well as shape his public image. A close analysis of Rome under Claudius offers an opportunity to investigate the state of the city of Rome a generation after Augustus boasted of having transformed it from "a city of brick into a (monumental) city of marble" (Suet. *Aug*. 28.3: *ut iure sit gloriatus marmoream se relinquere, quam latericiam accepisset*). Scholars tend to assume that Julio-Claudian Rome was synonymous with Augustan Rome and that no major changes occurred until the Great Fire of 64 during the reign of Nero.[8] But the reality was much more nuanced. By concentrating primarily on the large monuments put up by emperors, I believe, we lose sight of the city's constant state of transformation and the less visible foundational work that made the construction of temples and fora possible.

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[6] Haselberger et al. 2002; Favro 1996; Zanker 1988.
[7] Darwall-Smith 1996; Boatwright 1987 and 2000; Lusnia 2014.
[8] Interesting books and articles continue to be published on Augustus' building program (as noted above) and Nero's construction of his Golden House following the Great Fire of 64. For Nero's Golden House, see Bergmann 1994 and Ball 2003, for example.

Tiberius, Augustus' successor, became known for constructing no major public works during his time as Princeps (Suet. *Tib*. 47), but he did pay for the reconstruction of large parts of the city devastated by floods and fires. A major flood in 15 destroyed buildings and killed people living in the flood plain (Tac. *Ann*. 1.76: *eodem anno continuis imbribus auctus Tiberis plana urbis stagnaverat*; *relabentem secuta est aedificiorum et hominum strages*). A fire in 26 burnt everything on the Caelian hill to ashes (Tac. *Ann.* 4.64: *cum ignis violentia urbem ultra solitum adfecit, deusto monte Caelio*). Another fire in 36 burnt part of the Circus Maximus and much of the Aventine region (Tac. *Ann*. 6.45). A significant flood also hit the city in 36 (Dio 58.26.5; Zonar. 11.3). Despite Tiberius' alleged disinterest in what we would deem a "building program," the degradation of the city from natural disasters forced rebuilding during his 23-year reign. Overall, Tiberius' mark on Rome was the result of necessity and not prior planning or attentiveness for the city's residents. In fact, Tiberius famously preferred to distance himself from Rome during his reign, retiring and taking up residence in his villa on Capri in 26, the same year as Caelian hill conflagration (Suet. *Tib.* 43; Tac. *Ann.* 4.67.1).

Caligula, who was assassinated less than four years into his reign, was not in power long enough for us to assess his building fully. What can be gleaned from the extant sources is that most of Caligula's building initiatives were for the benefit of himself or other areas of the empire. Some of the most remarkable projects were for his

own personal enjoyment or display, like the massive palace-like floating barges on Lake Nemi and the temporary pontoon bridge built from Baiae to Puteoli to parade across (Suet. *Calig.* 12).[9] Neither of these structures served practical purposes or were even permanent. Following a major earthquake in 37 (Malalas 10.313-14), Antioch was given aid to rebuild, and under Caligula funds were also provided to Syracuse to rebuild its city walls (Suet. *Calig*. 21).[10] In the city of Rome, Caligula started construction on what would be the aqueducts called the Aqua Claudia and on an amphitheater in the Campus Martius, which, as we see below in Chapter 3, actually destroyed the public work that was part of another aqueduct called the Aqua Virgo (*CIL* 6.1252 = *ILS* 205).[11] Josephus, writing in Rome in the late first century, explicitly condemns Caligula for taking on no great imperial building projects of worth for the people (*AJ* 19.206-207). Caligula's building initiatives seem to match his legacy in the literary sources.

Claudius, on the other hand, is generally depicted in the ancient historical and biographical sources as weak and the puppet of his imperial wives, especially Messalina

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[9] See Barrett 1989, 201-202 for more on the Nemi ships.
[10] Barrett 1989, 195. See Barrett 1989, 192-212 for an assessment of Caligula's building and artistic program in the Roman empire. Barrett argues that Caligula picked up where Augustus left off with a zeal for building and art, but the collection of projects that survive in the record are not particularly practical.
[11] See Chapter 3 on Claudius' improvements to the water supply of rome for more on the Claudian inscription explicitly condemning Caligula's destruction of the Aqua Virgo *CIL* 6.1252a = *ILS* 205). This inscription is only surviving evidence for an emperor criticizing the actions of his predecessor.

and Agrippina the Younger, and his freedmen, most notably Narcissus.[12] Suetonius indicates that Claudius suffered so severely from various disorders throughout his childhood that it dulled the future emperor's body and mind (*Claud*. 2.1: *atque adulescentiae tempus variis et tenacibus morbis conflictatus est, adeo ut animo simul et corpore*). Currently, the most widely accepted diagnosis for Claudius' condition is cerebral palsy.[13] Augustus apparently decided that the best course of action would be to keep Claudius away from the public eye (Suet. *Claud*. 4). During this relegation to a life of study out of the public eye and with the support of his tutor, the famous Roman historian Titus Livius (59 BCE - 17 CE), Claudius wrote a twenty-book history of the Etruscans, an eight-book history of the Carthaginians, and an extensive history of Rome from Julius Caesar's rise to power to his own day (Suet. *Claud.* 42.2).[14] This in-depth research on foreign powers (both of which were once in conflict with Rome), and on the formation of the principate equipped Claudius with a thorough historical knowledge.

Claudius' upbringing may explain his interest in adding new letters to the alphabet (Suet. *Claud*. 41.3; Tac. *Ann*. 11.13-14) and in celebrating the Secular Games (*Ludi Saeculares*) in 47 (Suet. *Claud*. 21.2), only 64 years after the Augustan Secular Games

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[12] See below for more on the historical and biographical sources of Claudius.
[13] Levick 1990, 13n7 gives bibliography for the different diagnoses. The diagnosis of cerebral palsy is based on the symptoms gleaned from the literary sources. It is possible that the literature presented more hyperbolic descriptions of Claudius' condition.
[14] See Momigliano 1934, 1-19 for more on Claudius' education.

of 17 BCE. For the former, the three new letters were never universally introduced and fell out of use shortly after Claudius' death (Tac. *Ann*. 11.14). For the latter, which were supposed to be celebrated once a lifetime (*saeculum*), Claudius reportedly claimed that Augustus celebrated them too early (Suet. *Claud*. 21.2: *fecit et saeculares, quasi anticipatos ab Augustuo nec legitimo tempori reservatos*).[15] Tacitus suggests that Claudius wanted to celebrate the 800th year since Rome's founding by having the Secular Games in 47 (Tac. *Ann*. 11.11).[16] Claudius' background is said to have shaped these scholarly and antiquarian pursuits during his time in power. I argue that such a thorough study of Rome's history could have influenced his building initiatives as well.

In this study, I shall not analyze or discuss Claudius' entire reign, especially not his wives and other political conflicts. These events have been fully explored. The political and military events of the period are summarized in the timeline in the appendix.[17] My work, however, turns to the much less notorious, but essential, steady administrative work on Rome. When we consider the fuller historical record, and bring

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[15] Osgood 2011, 151-54 discusses the Claudian secular games. Suetonius, who must have read parts of Claudius' history of Rome from the rise of Julius Caesar (Hurley 2001, 150), indicates that Claudius' own writing about the Augustan Saecular games does not accuse Augustus of miscalculation. Given that Claudius was discouraged from writing about the second triumvirate by his mother Antonia and his grandmother Livia, it makes sense that Claudius would not criticize an important moment from Augustus' reign.

[16] Momigliano 1934, 90.

[17] Momigliano 1934; Scramuzza 1940a; Levick 1990; Osgood 2011. See Fasolini 2006, 25-41 for a succinct summary of the scholarship on Claudius and the imperial family.

epigraphic, numismatic, and archaeological evidence to bear on the literary accounts, Claudius appears as an emperor seeking to cultivate a beneficent *imperator* image through building. In contrast to the prototypical Augustus, however, Claudius focused on infrastructure rather than monuments.[18] Under Claudius' rule two major aqueducts were completed, structures for grain storage and distribution were built, a new port was constructed, new roads were cut through the city and environs, and more.[19]

A thorough study of Claudius' changes to the city of Rome also aids our understanding of the projects undertaken by subsequent emperors. Nearly every emperor who contributed substantially to the topography of Rome has his building projects read as hearkening back to the great building program of Augustus. Although Augustus was the prototype, throughout this study, I show that many of the projects of the Flavian emperors tie back to Claudius' ventures and models.[20] Augustus undoubtedly made an impact on Rome, but in the Flavian period, Claudius was the

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[18] Infrastructure improvements were made under Augustus, but most of them were completed under Agrippa's name.

[19] Richardson 1992, 445-58 provides a timeline of building projects in the city from 753 BCE to 608 CE, including ones attributable to Claudius' reign. Thornton and Thornton 1989, Appendix 2 lists every known structure built by the Julio-Claudian emperors. I am indebted to these compilations as a starting point for my own compilation of the evidence.

[20] Boyle 2002, 11 refers to Augustus as Vespasian's primary model for emulation, while Claudius and Galba served as two other models: for example, Vespasian's and Titus' repairs on the Aqua Claudia and Anio Novus (Chapter 3) and Vespasian's extension of the pomerium (Chapter 4). Vespasian also oversaw the completion of the Temple of Divine Claudius complex on the Caelian Hill, which was left incomplete during Nero's reign. See Coarelli 2009 for a series of short studies on the Flavian contributions to Roman topography.

most recent emperor who spent much of his time in the city of Rome, unlike Tiberius, and who was not a narcissistic and immature ruler, like Caligula or Nero. When Vespasian became emperor in 69, very few people living in the city lived under or were old enough to have vivid memories of Augustan rule. On the other hand, a good portion of Rome's population in 69 would remember Claudius' reign, a mere 15 years removed.

The kinds of projects that Claudius tackled were not flashy, but necessary, and previous study has tended to downplay them. Marion Blake described Claudius' contributions to the urban landscape of Rome as "utilitarian or of minor importance," and held that "his main interest was in engineering works away from Rome."[21] Osgood dedicates one chapter of his study on Claudius to the emperor's "Practical Pyramids,"[22] a clever but somewhat trivializing title; even here the emphasis falls more on how Claudius sought to create a "god-like" image by manipulating nature, and less on how these building projects impacted daily life and the urban landscape for inhabitants of Rome. In contrast, I aim at precisely this latter topic. Osgood, with an empire-wide scope for his project, was interested in illuminating what emperors symbolized in Rome and in the provinces rather than what they actually did. Keeping the diverse population

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[21] Blake 1959, 25.
[22] Osgood 2011, 168-89.

of the city content or at least acquiescent was key for a Roman emperor to be successful and remain in power.[23] What further drew me to study building during Claudius' principate is the emphasis on public works designed to create long-term solutions to problems endemic to Rome's urban population, like famine, drought, and flooding. Even "engineering works away from Rome" had effects on the city.

That emphasis on public works is clear in the extant sources. Writing a half-century after Claudius' death, Suetonius opens a section of his biography of Claudius by stating that the emperor always gave the most scrupulous attention to the city and the *annona*, the public grain dole (*Claud*. 18). Building enterprises of such magnitude were not the work of one individual, but required the mobilization of a group of workers, supervisors and project managers, and quite a bit of money.[24] M. K. Thornton and R. L. Thornton's book on the building programs of the Julio-Claudian emperors attempted to quantify the logistics, but potential pitfalls in their quantification methods seem to have deterred others from expanding on their analysis.[25] In this dissertation, I investigate how Claudius attended to the needs of a vast urban population in Rome, and how his

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[23] Flaig 2010 convincingly ties Nero's fall from power to his decline in favor in the eyes of the Roman people.
[24] Suet. *Claud*. 20.2 mentions that 30,000 workers contributed to the draining of the Fucine Lake project. Plin. *HN* 36.122 gives a figure of 350,000,000 sesterces for the cost of building the Aqua Claudia and the Aqua Anio Novus.
[25] Thornton and Thornton 1989. Some more successful uses of quantification in the study of Roman architecture include DeLaine 1997 on the Baths of Caracalla, and Lancaster 1999 on the Column of Trajan.

building in these areas—grain supply, water supply, and boundary marking and road building—disseminated his beneficent *imperator* image.

Just because a building project can be described as "utilitarian" does not mean it could not be "monumental" in terms of physical appearance and public impact.[26] A good example is the towering, travertine double-bay arch, known now as the Porta Maggiore, where two aqueducts of Claudius cross the convergence of two major roads into the city; we will investigate that structure in Chapter 3.[27] While Claudius did not rebuild 82 temples in the city, as Augustus boasts in the *Res Gestae Divi Augusti* (*RG* 20), Claudius' unique mark could be seen on the street level by his provision of a more stable system for grain supply and distribution, an increase in the water supply and abundant public water basins, and the organization of boundaries and land within the city, including the shoring up the riverbanks and the reclaiming of public land illicitly taken into private hands. These infrastructure improvements must have meant more to the common person living day-to-day in the city than did a new forum.

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[26] Thomas 2007, 1 provides a useful concept of monumentality in his study of the monumentality of the Antonine emperors: "[this book] attempts, rather, to consider the significance of the architecture of this period for contemporaries. Its focus is the question of architectural meaning. In the ancient world, buildings were not only a backdrop and setting for social interaction, but also a form of social language. This language had meaning not just for the professional group who constructed those buildings, but for the whole population who experienced them."

[27] *LTUR* 3.310-11, s.v. "Porta Praenestina," (G. Pisani Sartorio). The Porta Maggiore is often compared to a triumphal arch, but I argue in Chapter 3 that the design is more reminiscent of Roman stone bridge design.

Projects that receive the most attention in ancient sources and in modern scholarship tend to be temples and civic buildings.[28] Consider the public building section of Augustus' *Res Gestae*. Nearly all of the structures recorded in chapters 19 through 21 are temples, fora, and basilicas, although a few infrastructure projects are mentioned, like repairing aqueducts and rebuilding parts of the Via Flaminia (*RG* 20). However, the infrastructure improvements are literally buried among an exhaustive list of temples. Andrew Wallace-Hadrill, acknowledging the impact of large monumental structures under Augustus, argues that the dissemination of Augustus' image and ideology largely happened at the street-level through the neighborhood magistrates, called the *vicomagistri*, and the smaller-scale imperial shrines.[29]

In a different vein, Gerda De Kleijn examines how Agrippa's infrastructure improvements as aedile in 33 BCE helped bolster Octavian's rise to power by addressing the needs of the people.[30] Infrastructure improvements were made under Augustus, who put Agrippa in charge of the more humdrum, but essential initiatives like building the Aqua Virgo and clearing out the sewer system. While Agrippa took care of the dirty work, so to speak, Octavian oversaw the completion of the monumental structures,

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[28] Kaiser 2011, 18-19 points out that scholars often assume that the physical make-up of a city is a direct reflection of elite views of societal norms, but that such an assumption assumes that members of varying socio-economic class and ethnic backgrounds willingly submit to elite visions of space syntax. His book applies space syntax theory to Roman urban street networks.
[29] Wallace-Hadrill 2003.
[30] De Kleijn 2003.

including Julius Caesar's forum, the Curia Julia, and a Temple to Divine Julius Caesar. Agrippa was the one who rode a boat through the Cloaca Maxima to celebrate the clearing of blockage in the sewer system, not Augustus (Dio 49.43). Instead, Claudius was the face of his own infrastructure projects.

Rather than provide a survey of Claudius' work region by region in the city, as has been the usual approach for studies of building within the reign of a particular emperor, the following chapters of my dissertation center on important infrastructure-driven initiatives in the city: the grain supply, water supply, and boundaries and roads. With this categorical approach, I will spend comparatively less time on imperial building in the city that did not relate to essential infrastructure, such as alterations to the imperial residence on the Palatine hill.[31] Despite the destruction caused by the Great Fire of 64, I show that Claudius' physical and organizational imprint remained. This investigation will be of use not only to those interested in Claudius and Julio-Claudian Rome, but also for any interested in imperial building programs and their greater impact on urban and social history. How did a Roman emperor go about solving, or attempting to solve, day-to-day problems in the city? And could his efforts to address such transient yet vital problems affect the city in a lasting manner?

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[31] See Michel 2015, 50-58 for a summary of the work done on the Domus Tiberiana. Michel 2015, 63-73 addresses the imperial acquisition of gardens (*horti*) on the eastern side of the city.

The exact agency of a Roman emperor in administrative decision making is virtually impossible to discern given the lack of evidence. When I refer to Claudius doing something, I do so with an understanding that Claudius may not have personally signed off on the decision. However, an emperor's overall approach likely influenced decision making at all levels. Fergus Millar's seminal work in 1977, *The Emperor in the Roman World*, argued that the emperor primarily reacted to entreaties and crises, rather than taking a proactive approach. Jonathan Edmonson more recently has asked if it is possible to make a generalized statement about the relationship between the emperor and his subjects across such a wide time frame and geographic extent.[32] This study seeks to nuance Millar's argument by showing how within the reign of a particular emperor, in this case Claudius, efforts can be discerned that indicate a more proactive approach. This interpretation is supported by Claudius' well-known interest in history, which can well be imagined as providing him a wealth of examples of the city's problems.[33] Claudius initiating construction on Portus may well have been inspired by the food shortage at the start of his reign, but the solution had a long-term impact.

The rest of this chapter lays out the different types of sources and various interpretations at disposal for Claudius' actions in the city of Rome. I end with a

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[32] Edmondson 2015, 702.
[33] Suet. *Claud*. 41 references Claudius writing a forty-one-book history of Rome from the death of Caesar and an eight-book autobiography. Unfortunately, none of these works survive.

summary of Rome's population and demographic makeup, and the state of the urban landscape when Claudius came to power in 41. This lays the foundation for the next three chapters, each of which examines Claudius' impact on a different category of infrastructure. Urban design during this period was very much influenced by the needs of Rome's masses; it was not simply power architecture for the sake of grandeur and aggrandizement.

Chapter 2 looks at the practical measures put in place under Claudius to secure the steady supply of affordable grain to the city and how this was advertised. Many scholars have explored the convoluted history of the grain supply in Rome.[34] I do not replicate such studies, whose findings have not been changed by any significant new discoveries, but instead focus on how the labors put in to improve and to advertise such improvements to the food supply of Rome under Claudius changed and shaped the city's urban landscape. The chapter highlights how Claudius worked to assure the urban grain supply with infrastructure improvements, from the cultivation of the crop to its distribution to the people. For example, a new structure called the Porticus Minucia Frumentaria was built for the distribution of monthly rations of free grain to

[34] See, for example, Rickman 1980 and Virlouvet 1995.

qualifying citizens.[35] Archaeological remains of this portico have yet to be definitively identified, but three structures in archaeological record in the Campus Martius have been argued to be the Porticus Minucia Frumentaria. I spatially evaluate each proposal based on its size, proximity to the Tiber, and location in the flood plains. I consider how far a Roman citizen may have had to carry his 5 *modii* allotment of approximately 75 pounds of grain from the portico to his residence, considering what other Claudian monuments he would pass along the way.[36]

In Chapter 3, focused on water and its distribution in the city, I analyze archaeological and epigraphic evidence to assess Claudius' effects on Rome's water supply. By establishing large markers for water routes Claudius changed commemoration of water supply improvements in Rome, impacting the city and setting a trend that would be followed by later emperors. I use Frontinus' ancient treatise on Rome's water supply together with archaeological and epigraphic evidence to map diachronic changes in the regional distribution of Rome's water under Claudius. Visualizing these changes lets us consider building as a process, and see what disruption, repair, and construction of aqueduct lines did to water distribution to

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[35] Some, including Coarelli 1968, believe that the Porticus Minucia Frumentaria was built after Claudius' reign. We explore this further in Chapter 2.
[36] In Chapter 2, I examine the archaeological sites that Coarelli 1968, Richardson 1992, and Zevi 1993 identify as the Porticus Minucia Frumentaria.

particular regions of the city. The maps suggest that Claudius improved the potable water supply in areas where the poorer population of Rome lived.[37]

Chapter 4 addresses road building and boundary marking, the visual and practical changes made to the organization of and movement in the city. Even the most symbolic of boundaries, the *pomerium*, the sacred boundary of Rome originally marked out by Romulus, saw an expansion and the creation of monumental markers by Claudius. Organizing the boundaries into and out of the city facilitated movement and the urban development of areas along the banks of the Tiber River.[38] I argue not only that the boundary-defining and road-building initiatives, largely undertaken during Claudius' censorship from 47 to 48, visually and symbolically influenced the city in unique and trend-setting ways, but also that Claudius' assumption of this traditional office facilitated his adding new roads and public land boundaries, so critical to the organization of the city. The visualization in this and other chapters allow us to see, much more clearly than before, an emperor's impact upon the general populace and toobtain a clearer picture of the city's urban history.

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[37] I recognize that there was not zoning in the ancient city of Rome and that people of a variety of social classes would be living in the same neighborhood (Wallace-Hadrill 2003, 195). However, housing in low-lying areas of the city, prone to flooding, would not have been the first choice for a wealthy resident.
[38] See Malmberg 2015.

My compilation and analysis of all pertinent evidence reveals a thorough revision of Rome's infrastructure by Claudius, despite his common denigration as an ineffectual buffoon. His new water basins and grain warehouses impacted the lives of Rome's underprivileged masses. My work provides a new framework for examining imperial building in Rome. The infrastructure projects that made all other construction possible are at the forefront. The negative aspects of Claudius' character portrayed in the literary sources are counterbalanced or at least nuanced when a focus on infrastructure and care for the people provides a different viewpoint. An emperor's popularity and legacy among the people would not be measured by jealous quarrels among the aristocracy.

1.2 Claudius the Builder: The Sources

The sources for Claudius' reign in general and for his building and infrastructure changes in the city of Rome vary both in type and utility. The biographical and historical accounts of Suetonius and Tacitus respectively have been the most prominent in reconstructing the story and portrait of Claudius as emperor. One aim of this dissertation is to reexamine the image of Claudius portrayed in Suetonius and Tacitus by bringing other literary accounts and various material evidence to bear. Since the emphasis of this study is on infrastructure built in or for the city of Rome, less traditional types of literary evidence can be incorporated into the analysis, like

Frontinus' treatise on the aqueducts and Josephus' account of the death of Caligula and rise of Claudius.

Constructing a coherent picture of building in Rome during the reign of Claudius, particularly of infrastructure, requires the integration of the literary, numismatic, epigraphic, and archaeological evidence. A useful variety of primary sources survive for Claudius and his principate, but each type of source has its own merits and limitations. Surviving literary evidence that mentions Claudius' building projects can offer insight into how they were perceived at the time the respective author was writing. Since these sources represent a wide range of genres from history and biography to technical and encyclopedic, genre and purpose must be considered before extrapolating any information as historical fact. I consider below what each category of source material can tell us about building and infrastructure during Claudius' reign, in general terms.

1.2.1 Literary Evidence

Suetonius, Tacitus, and Cassius Dio are our primary historical sources for the reign of Claudius. None lived in the years from 41 to 54, with Suetonius and Tacitus writing in the late first to early second century, and Dio writing in the third century, but all wrote extensive extant works that include the Julio-Claudian period. Though each author contributes valuable information, their overall assessments of Claudius are

similar: Claudius did some good, but he was controlled by his wives, most notoriously Messalina and Agrippina, and his freedmen. Pliny the Elder, Seneca the Younger, and Josephus were all alive during Claudius' reign, with the first two actively writing at the time. Frontinus composed a treatise on the aqueducts, presenting information he gained during his time as *curator aquarum* in 97 under Nerva. While Frontinus was not a contemporary of Claudius, the state of the water supply system he described did not undergo any major changes in the half-century following Claudius' death in 54.[39] No new aqueducts were built between 52 and 97.[40] I consider these literary sources not in chronological order, from most to least contemporary to Claudius' reign, but in order of the amount of information provided about Claudius and his role in public building.

Suetonius' *De Vita Caesarum*, *Lives of the Caesars* includes a biography on Claudius amongst those on Julius Caesar through Domitian.[41] The *Life of Claudius* is not as long as the *Lives* of the other Julio-Claudians, but it is more than twice the length of the individual *Lives* of each of the Flavian emperors.[42] Before assessing Suetonius' take on building under Claudius, we should first consider the author's method and purpose. Different from a conventional historical account presenting events in chronological

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[39] The aqueduct repairs recorded by Vespasian and Titus on the Porta Maggiore (*CIL* 6.1257-1258) were not as substantial as the language in the inscriptions suggest. See *LTUR* 3.310-11, s.v. "Porta Praenestina," (G. Pisani Sartorio) for more on the Porta Maggiore.
[40] Nero had an extension of the Aqua Claudia built to carry water to the Palatine hill.
[41] For a recent collection of studies on Suetonius' biographies, see Powers 2014.
[42] Hurley 2001 is the most recent commentary on the *Life of Claudius.*

order, Suetonius' *Lives of the Caesars* are usually described as "biographies" rather than "histories."[43] Our natural propensity to categorize Suetonius' writings as something other than history assumes that contemporary readers had a preconceived set of generic expectations for biography. Some later writers referred to Suetonius as a historian, while others spoke of his work as "Lives."[44] Ultimately, Tristan Power makes a valid point that quibbling over terminology is less important than understanding Suetonius' lives on their own terms, developing the stylistic criteria he uses.[45]

The stylistic elements that distinguish Suetonius's writings are his consistent use of 3rd-person verbs and the categorical arrangement of information using rubrics, which are basically headings as topic sentences. Except for the *Life of the Deified Julius Caesar*, the subject of the third person singular verbs is rarely ever repeated because the subject is almost exclusively the emperor himself.[46] A natural problem for any modern historian using Suetonius is that the nuances of agency are undetectable, since nearly every action is attributed to the emperor.

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[43] Pelling 1999, 329n14 argues that biography is essentially a useful shorthand for us to talk about one of the many different ways Romans wrote about the past.
[44] Power 2014, 2.
[45] Power 2014, 1-2.
[46] The *Life of the Deified Julius Caesar* is the exception because of the other major players vying for power during the mid-1st century BCE, like Pompey the Great.

From his use of rubrics, Suetonius generated a set of standards by which he measured each emperor, because the same or similar rubrics can be found in each *Life*.[47] This facilitated direct comparisons between the individuals in respective categories or character traits and can better reveal Suetonius' assessment of each emperor. Most of the *Lives* reveal a distinct turning point in the narrative. For "bad" emperors, like Caligula (*Calig.* 22), Nero (*Nero* 19.3), and Domitian (*Dom.* 10), that moment represents a shift from good characteristics and actions to bad ones.[48] The rubric marking the turning point for Caligula speaks of moving on from describing his role as emperor, to a description of his time as a monster (*hactenus quasi de principe, reliqua ut de monstro narranda sunt*). For "good" emperors, like Titus, the shift is from bad to good (*Titus* 8). As Donna Hurley has observed, even the more neutral emperors like Tiberius and Claudius are placed on this binary axis of good and bad.[49] Tiberius is relatively good, until he heads off to Capri (*Tib*. 43.1), while Claudius is generally praised, until the credit for all the good things he did is given to his wives and freedmen (*Claud*. 25.5). The credit assigned to Claudius' wives and freedmen is not tied to a specific event, but rather a general statement about his time in power.

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[47] Hurley 2014, 30.
[48] Unlike Domitian, Caligula and Nero were never officially voted a *damnatio memoriae* by the senate. According to Dio, Claudius prevented this from happening for Caligula (Dio 60.4.5). Nero, instead, was declared a *hostis publicus*.
[49] Hurley 2014, 32.

Suetonius presents public building and funding for *ludi* (public games) almost exclusively in a positive light in the *Lives of the Caesars*, except in the cases of Tiberius and Nero.[50] Public building is mentioned in both the positive and negative sections of both *Lives*. Tiberius' construction of the Temple of Concordia and restoration of the Temple of Castor and Pollux during Augustus' reign are both noted early in his *Life* (Suet. *Tib.* 20), but later Suetonius states that Tiberius completed no great works while emperor (Suet. *Tib.* 47). This latter note serves as a point of contrast to Augustus' great works (Suet. *Aug*. 28-29), and possibly implies that Augustus was the only the reason why Tiberius built anything in Rome. Similarly, in the *Life of Nero* Suetonius praises Nero's construction of a massive amphitheater in the Campus Martius made out of wood in the span of only one year (*Nero* 12). Other projects mentioned in the positive section of the *Life of Nero* include developing a new building style to prevent fires (*Nero* 16.1) and a plan to extend the walls of the city to Ostia and to build a canal to aid movement of goods between the port and the city (*Nero* 16.1). For the reader of Suetonius who knew about the Great Fire of 64 (Tac. *Ann* 15.38-41, Suet. *Nero* 38), the

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[50] The treatment of public building in the *Life of Tiberius* and *Life of Nero* is a nice illustration of Cicero's earlier distinction between *liberales* and *prodigi* (*Off*. 2.16-20). The distinction between the two seems straight forward at first: the *prodigi* give public banquets, gladiatorial shows, essentially ephemeral things, while the *liberales* help with debts, paying ransom. As the definition of *liberales* continues, however, the distinction between the two becomes very fuzzy. Cicero states that if the public demands games, then they should be given. If money must be spent on improving the city, then it should be on walls, docks, aqueducts, and other public works, but at the same time he does not outright criticize Pompey's new theater and temples. In nearly every *Life*, public building falls under the *liberalitas* rubric or at the very least on the positive side alongside other topics like gifts and entertainment.

fact that Nero created a new building code to help prevent fires would seem a bit ironic. At the turning point from good to bad, public building shows up again, but this time with the rubric that there was nothing Nero was more prodigal in than building, at which Suetonius turns to a description of the Golden House (Suet. *Nero* 31). The creation of a new building code to bolster fire protection probably occurred after 64, but this information is placed earlier in the *Life* to keep Nero's good and bad actions separate. This brings us to one of the inherent problems in Suetonius' method: his use of topical arrangements jumbles chronology.

Looking specifically at Claudius, Suetonius tells us that he centered his efforts on upkeep of the city and the grain supply (*Claud*. 18: *urbis annonaeque curam sollicitissime semper egit*), but that his public works were great rather than numerous (*Claud*. 20.1: *opera magna potius necessaria quam multa perfecit, sed uel praecipua*).[51] Following the initial rubric are specific illustrative examples. For public works, Suetonius lists the Aqua Claudia and Anio Novus begun by Caligula but finished by Claudius (*Claud.* 20.1: *ductum aquarum a Gaio incohatum*), the attempt to drain the Fucine Lake (*Claud.* 20/1: *Fucinum adgressus est*), and the harbor at Portus (*Claud.* 20.1: *Portum Ostiae extruxit*). The

[51] Hurley 2001, 143-44 points out a textual problem with the opening line of Chapter 20. The manuscripts have an extra quam in the sentence: "*opera magna potius quam necessaria quam multa perfecit, sed uel praecipua.*" The tone of the sentence changes significantly if the first *quam* is retained and the second *quam* removed: "Claudius completed many projects that were great rather than necessary." Since none of the other rubrics from sections on Claudius' public works (chapters 18-21) offered judgement, it would be out of place for Suetonius to state that the works were not necessary.

last two projects, though outside of Rome, still had an impact on the city and provide a good illustration of types of projects undertaken during Claudius' reign. To judge from Suetonius' description of the fountains of water as plentiful and ornate (*plurimos et ornatissimos lacus*), a good number of them may have still been in use in Suetonius' time. For the city of Rome, the new aqueducts and the many beautifully ornamented fountains distributing water certainly made a lasting impact for the people.

Suetonius substantiates with specific examples his claim that Claudius gave the best care and attention to the city (*Claud.* 18.1). Claudius is depicted as caring so much about the city that he spent the night in the Diribitorium in the Campus Martius so that he could oversee the firefighting efforts for a destructive fire. People may or may not have literally pelted Claudius with bread crusts to express their anger about the grain shortage, but the story does suggest that the collective actions of inhabitants in Rome could incite change. This story also underscores Claudius's response to the people's needs and desires. Claudius is shown attending to an unpredictable crisis and responding to the crowd (Suet. *Claud.* 18.2-19). Additionally, the emperor is shown to have made long-range plans by offering incentives to those who could assure that grain imports arrived in Rome in a timely manner. In this example, Claudius sought a long-term solution to a common problem in the city.

Infrastructure initiatives are found not only under public building rubrics. Earlier in the *Life of Claudius*, Suetonius writes that Claudius completed a monumental arch dedicated to Tiberius near the Theater of Pompey, a display of *pietas* for his family lineage (Suet. *Claud*. 11.3). Overall, Suetonius provides us with useful information on what was built or done to help the people of Rome, but his method makes nuances of chronology and agency difficult to determine. The fact that Suetonius ultimately assigns agency for nearly all actions carried out during Claudius' reign to the emperor's wives and freedmen (*Claud.* 29) is problematic because of the clear influence of Claudius' scholarly pursuits on monumental design, rusticated columns, and inscriptional orthography, which I address at different points throughout this study. For the historian interested in diachronic changes within the reign of a single emperor, Suetonius' categorical organization of material confuses chronology.

Tacitus offers a more traditional annalistic historical presentation of Claudius' time in power but due to a problem with manuscript survival, the books of Tacitus' *Annals* on the principate of Claudius are incomplete.[52] We are missing Tacitus' account of the years 38-46, which includes nearly half of Claudius' time as emperor.[53] Although

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[52] Malloch 2013 is the most recent commentary on Book 11. Koestermann 1967 is a commentary on Books 11-13. See Malloch 2013, 9-21 for a summary of the scholarship on the manuscript tradition for Tacitus' *Annals*.
[53] Books 11 and 12 were likely part of an original four on the reign of Claudius (Malloch 2013, 1).

the *Annals* have a chronological basis for the narrative, the prominence of certain episodes, such as the death of Messalina (11.26-38), and frequent digressions, including one on the history of the alphabet (11.14), allowed Tacitus to craft his own portrait of Claudius. Tacitus' portrait is one of a passive leader, preoccupied with trivial matters while his wives and freedmen take control.[54]

Book 11 covers the years from 47 to 48, which includes Claudius' time as censor with Lucius Vitellius. Tacitus opens his description of Claudius' censorial accomplishments by openly stating that he ignored the issues surrounding his marriage to Messalina to focus on the office (*Ann.* 13.1). As censor, in addition to overseeing the first census taken since Augustus' reign, Claudius assumed traditional duties of that position such as maintaining the city and building new roads (*Ann*. 11.13). The notable actions of Claudius' time as censor, according to Tacitus, were the enactment of laws against the greed of money lenders, forbidding them to lend money based on one's inheritance; the construction of the Aqua Claudia; and the incorporation of three new letters into the alphabet (*Ann*. 11.13). It is here where Tacitus spends an entire chapter discussing the history of alphabets (*Ann*. 11.14).

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[54] Malloch 2013, 4-5 describes Tacitus' depiction of Claudius as passive and marginalized. See Syme 1958, 259-60 and Griffin 1990, 483-84 for more on Tacitus' portrayal of Claudius.

While Tacitus implies that Claudius was preoccupied with a relatively trivial matter with the introduction of three letters into the alphabet, the epigraphic record tells a different story. The new letters were: an "antisigma", meant to replace the sound of B+S or P+S, the Claudian digamma, represented by an inverted F,[55] and what appears to be a half H (⊢), the exact function of which remains obscure, but may have stood in for the Greek upsilon or a sound between e and i.[56] Both Suetonius (*Claud*. 41.3) and Tacitus (*Ann.* 11.14) speak as though the new letters were used ubiquitously and universally in Claudian Rome. Two of the three letters appear in the epigraphic record, with the Claudian digamma (ɟ) used more frequently. The half-h survives, but is almost exclusively on inscriptions established by private individuals. My study of the extant evidence, which I will publish elsewhere, shows that the orthographic changes were not tied to Claudius' censorship and the changes were not evenly implemented even on the most monumental of Claudian inscriptions.[57] Their dissemination on imperially issued

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[55] The digamma was inverted for use in the Latin alphabet to avoid confusion with F.

[56] Oliver 1949 argues that the letter was based on a 5th century Boetian character meant to represent the sound between e and i. Oliver 1949, 252: "Although all the inscriptions are private rather than official, the number of occurrences is sufficiently great, I think, to preclude the possibility of error, and to render it unlikely that Claudius' instructions were so consistently misunderstood." There is more work to be done on the dissemination of Claudian orthography on privately commissioned inscriptions. Certain workshops may have been more well-versed on the changes or people were influenced by what could be seen on imperially issued inscriptions (i.e. spread based on fashion, like self-presentation in female hairstyles).

[57] Two boundary marking inscriptions from Claudius' censorship survive, one (*CIL* 6.919 = *ILS* 211) uses a Claudian digamma, while the other (*CIL* 6.40887) does not. The Porta Maggiore, recording the dedication of the Claudian aqueducts in 52 offered several opportunities to deploy a digamma, but none are included.

inscriptions was not nearly as ubiquitous as Suetonius suggests, and Claudius was not as preoccupied with the task as Tacitus implies.

In a narrative turn like Suetonius, Tacitus concludes his account of Claudius' time as censor and states that this was the point when domestic affairs, particularly with respect to his wives and freedmen, became a distraction (*Ann*. 11.25). Tacitus casts Narcissus in the lead role in revealing and responding to Messalina's affair. Claudius is relegated to the background, reacting with fear, confusion, and silence while Narcissus acts.[58] Book 12 opens with a statement that Claudius had no likes, dislikes, or inclinations of his own, but instead had matters dictated to him (*Ann*. 12.3). Some scholars have characterized Tacitus' account of Claudius as "two-sided," much like Suetonius' portrait of the emperor.[59]

Tacitus' source material for crafting his histories has been hotly debated. Sir Ronald Syme argued that Tacitus' main source of information when writing the *Annals* was the *acta senatus*,[60] the written accounts of senatorial debates. Others believe that Tacitus' primary source was the work of another historian.[61] Tacitus reports a speech of Claudius delivered to the senate about allowing Roman citizens from Gaul to become

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[58] Malloch 2013, 5.
[59] Griffin 1990, 483.
[60] Syme 1958, 282.
[61] Griffin 1990, 483.

senators (*Ann.* 11.23-25.1). This speech was also preserved in an inscription, known as the Lyon Tablet, encouraging comparisons between the two to elucidate Tacitus' approach.[62] Miriam Griffin argues that Tacitus, having access to a reliable source, used recorded speeches of Claudius to highlight both good and bad aspects of the emperor in a more balanced way than did Suetonius.[63] It has been assumed that Suetonius read the *Annals* and wrote his *Lives* as a kind of supplement to Tacitus' material. Power has shown that such an interpretation is not supported by the evidence.[64]

The types of sources a historian used or had access to contributes to the perceived veracity of the information presented. Even if Tacitus used credible, primary source material when writing the *Annals* that does not mean that his account was unbiased.[65] The *Annals* must be understood as a work of literature. Tacitus marshalled the evidence in a way to recount the reign of the Julio-Claudians as he viewed it. Tiberius, Caligula, Claudius, and Nero are not treated the same. For example, unlike Tiberius Claudius is not given an obituary in the *Annals* to summarize the accomplishments of his reign. Claudius' death is presented as mere stepping stone on

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[62] For more on the Lyon Tablet, see Fabia 1929. The Lyon Tablet has been used to evaluate the historical technique employed by Tacitus, Claudius' scholarly pursuits, and the spread of Roman citizenship. See Syme 1958, 317-19, Momigliano 1934, 10-16, Griffin 1982, and Osgood 2011, 165-67. Townend 1962, 358 argues that Tacitus did not have the original speech at his disposal, but instead had it from another annalistic historical source.
[63] Griffin 1990.
[64] Power 2014.
[65] Sief 1973, 295-98.

the path to Nero coming to power. Tacitus' narrative, though incomplete, provides information about the period from 46 to 54 that is not present in other sources, but his interpretation of Claudius' character as being controlled influences his presentation of the emperor's building projects.

Cassius Dio, writing his Roman Histories in Greek in the early third century (Dio 72.23), spends two books on the reign of Claudius, Books 60 and 61. Book 60 is intact, but Book 61 survives only in epitomes.[66] His account of Claudius opens with praise of many of Claudius' actions, with the caveat that his wives and freedmen caused the deterioration of his condition (60.2.4). Some of the praiseworthy actions include his presence and visibility in the city; sitting on a tribunal hearing cases on a near daily basis (60.4.3); his hatred of wasting money on unnecessary things, including people spending money to dedicate votive statues in his honor (60.5.4-5), and the construction of Portus to assure a consistent grain supply to the city, even during the winter months (60.11.1). While removed from the Claudian period by over 150 years, Cassius Dio does help supplement what others wrote about the reign, and he gives a sense of how Claudius

[66] Millar 1966, 1-4 summarizes the sources used to restore Dio's narrative in the books that survive only in fragments or epitomes.

was viewed later in Roman history.[67] Readings of Dio must acknowledge, however, the influence that contemporary politics had on his narrative.

A few more contemporary literary sources can help supplement the historical accounts of Suetonius, Tacitus, and Dio. Pliny the Elder was born around 23, during the reign of Tiberius, and died during the eruption of Mt. Vesuvius in 79, in the reign of Titus, the second emperor of the Flavian dynasty. A true contemporary of the Claudian period, Pliny the Elder served in several political and military posts during the time, even serving as an advisor to the emperor.[68] Pliny the Elder speaks about Claudius' building projects in very positive terms. He notes that at a cost of 350,000,000 sesterces, the Aqua Claudia and Aqua Anio Novus surpassed all other aqueduct projects (*HN* 36.122). Pliny remarks that the person who saw the sheer amount of water supplied and the size of the enterprise must admit that there was nothing in the world more marvelous (*HN* 36.122: *fatebitur nil magis mirandum fuisse in toto orbe terrarum*). The passage continues to describe the construction of the tunnel to drain the Fucine Lake in central Italy (See Fig. 1). Pliny concludes by employing *praeteritio* to mention a few other projects:

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[67] Millar 1966, 83-118 uses the reign of Augustus as a case study for examining the influence of contemporary politics and hindsight on Dio's narrative. Edmondson 1992 brings together the sections of Dio's Histories that "fill in the gaps," so-to-speak, from Tacitus' narrative.
[68] See Murphy 2004, 2-3 for a summary of Pliny the Elder's political, military, and scholarly career.

nam portus Ostiensis opus praetereo, item vias per montes excisas, mare Tyrrhenum a Lucrino molibus seclusum, tot pontes tantis inpendiis factos.

Now I pass over construction of the harbor of Ostia, and also the roads cut through mountains, the separation of the Tyrrhenian sea from the Lucrine Lake with moles, and all the bridges built at such great a cost (Plin. *HN* 36.123-25).[69]

It is clear that Pliny admired Claudius' building projects for their practicality despite their exorbitant cost.[70]

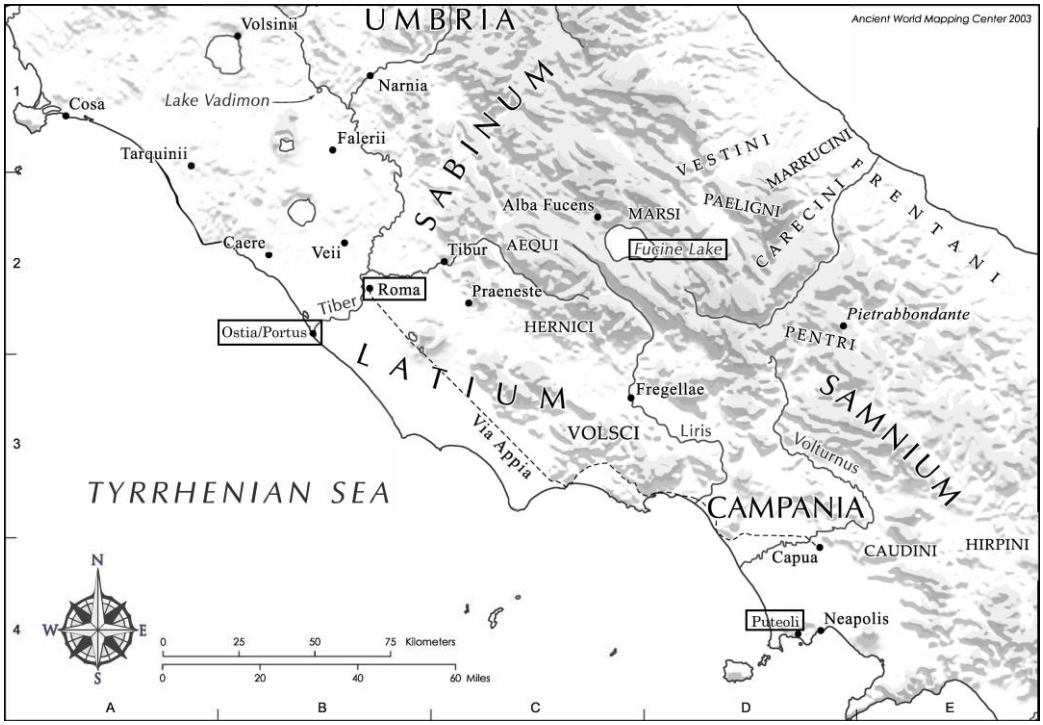

Figure 1: Map of central Italy. Cities and geographic features discussed in this study are marked with a rectangle (Base map source: Ancient World Mapping Center).

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[69] All translations are my own unless specified otherwise.

[70] Osgood 2011, 177; Coates-Stephens 2004, 35, argues that Claudius' aqueducts were two of the greatest feats of engineering in Roman times.

Frontinus, who served as the water commissioner of the aqueducts under Nerva in 97, wrote a treatise *De aquaeductu urbis Romae, On the Water Supply of the City of Rome*.[71] Based on the numbers provided by Frontinus, the Aqua Anio Novus and the Aqua Claudia supplied nearly fifty percent of water in the city in his time (Frontin. *Aq*. 72-73). No new aqueducts had been built between the reign of Claudius and the time Frontinus was writing, so his treatise serves as a useful source for the water supply of Rome during the Claudian period.[72]

One historical account of Claudius' reign that is not often at the forefront of studies on the emperor is Josephus' account of the assassination of Caligula and the elevation of Claudius to head the principate in his *Antiquities of the Jews*, *Antiquitates Iudaicae*. Josephus, born in Jerusalem, traveled to Rome in 64 at the age of 26, and then returned to his homeland to participate in the disastrous First Jewish Revolt.[73] Transferring allegiance to Vespasian and the Romans, Josephus was granted Roman citizenship in 71 and began writing histories in Greek. His first was an account of Jewish War in 66. Commissioned by Titus himself, the work places Vespasian, Titus, and the actions of the Romans in a positive light. The next writing project tackled by Josephus was the *Antiquities of the Jews*, which aimed to tell the story of the Jewish

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[71] See Evans 1994, 1-8 for more information on Frontinus.
[72] See the summary of Chapter 3 below on the water supply of Rome under Claudius.
[73] Wiseman 1991, ix-x.

people from the creation of Adam up to the Jewish Revolts. It is this work that contains a valuable, more contemporary view of Claudius' work in Rome compared to that of Caligula.

Josephus' obituary for Caligula explicitly condemns him for taking on no great imperial building projects of worth for the people (*AJ* 19.206-207). He mentions that Caligula was reported to have had plans to build a large harbor in Southern Italy (near Rhegium) to help the transport of grain, but that this was never started "because his enthusiasm for useless expenditure on pleasures that benefited no-one but himself took away his ambition for undeniably greater things."[74] This statement is followed by glowing praise for Caligula's oratorical skill and intelligence, which shows that Josephus was not simply writing a hyperbolic, scathing denunciation. From a historiographical standpoint, there seems to have been a link between building in the city of Rome and being considered a "good" emperor. According to Josephus, the Senate was not keen on the choice of Claudius as Caligula's successor, but the people were. Josephus reports that the people viewed Claudius as an emperor who would prevent the type of civil strife that plagued the mid-first century BCE (19.228). Josephus helps fill in gaps in the historical narrative by giving a more contemporary account of the transition from

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[74] *AJ* 19.206-207: αἴτιον δ' ἦν ἡ περὶ τὰ ἀχρεῖα σπουδὴ καὶ τὸ δαπανῶντα εἰς ἡδονάς, αἳ καταμόνας ἔμελλον ὠφελεῖν, αὐτῷ ὑφαιρεῖν τῆς ἐπὶ τοῖς κρείσσοσιν ἀνωμολογημένοις φιλοτιμίας. The translation above is from Wiseman 1991, 30.

Caligula to Claudius, and he stresses the utility of imperial projects in his short remarks on Caligula and Claudius.

The authors discussed above do not represent an exhaustive list of every piece of literature relevant to Claudius and building during his reign, but they happen to be the most informative. Seneca the Younger, writing his *Consolatio ad Polybium* in 43/44 CE, captures infrastructure and people-focused emphasis under Claudius by stating that the emperor showed how much more effectively imperial power was secured by *beneficia* than by arms (Sen. *Cons. ad Polyb*. 12.3). The assessment may have been driven by Seneca's desire to flatter the emperor and to earn a pardon allowing him to return to Rome from exile in Corsica.[75] Following the emperor's death, it may have been Seneca who was quick to denigrate Claudius' reputation with the *Apocolyocyntosis*, a satirical mix of poetry and prose that mocks Claudius' deification.[76] Barbara Levick and others have warned about the varied and shifting legacy of Claudius in the literary sources being more of a reflection of the time when an author was writing than of Claudius himself.[77] Regardless, the literary record does seem to substantiate Seneca's claim in the *Consolatio ad Polybium* that Claudius solidified his political power with care for the

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[75] See Gloyn 2014, 451n3 for scholarship regarding the connection between Seneca's *Consolatio ad Polybium* and the *Apocolocyntosis.*
[76] See Eden 1984, 1-25 for more on the *Apocolocyntosis*. The title *Apocolocyntosis* is not given to the text in any of the surviving manuscripts but has been connected to this work because of a reference by Cassius Dio (60.35.2).
[77] Levick 1990, 187-97.

people rather than by force, even if the statement was intended to flatter Claudius.[78] My project seeks to bring this part of Claudius' principate to the forefront.

1.2.2 Regionary Catalogues

The two documents known as the *Curiosum* and *Notitia*, and usually grouped together as the *Regionaries* or the Regionary Catalogues, record major buildings and monuments in Rome organized by the fourteen Augustan regions. Augustus divided the city of Rome into fourteen regions and 265 wards in 7 BCE (Plin. *HN* 3.66; Suet. *Aug*. 30.1; Dio 55.8).[79] In addition to listing the names of buildings, the Regionaries include numerical counts of various types of structures in each region. The structures enumerated include *insulae*, warehouses, baths, and various named buildings.[80] The exact date of the two documents is still debated. Some argue that the *Curiosum* catalog is older than the *Notitia*, others, the opposite.[81] Regardless, it is generally agreed that the Regionaries date to the fourth century.

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[78] Gloyn 2014 pushes back on the overall assessment that Seneca was attempting to gain Claudius' favor through flattery in the *Consolatio ad Polybium* by elucidating the Stoic dimension of the text.
[79] For more on the reforms of Augustus in the reorganization of Rome's regions and neighborhoods, see Lott 2004, 81-127.
[80] See Storey 2002 for a study on the definition of *insula* in the Regionary Catalogues.
[81] Storey 2002, 412-13 offers extensive bibliography on the dating debates for the Regionary Catalogues. Nordh 1949, 58-67 argues that the *Curiosum* was compiled under Diocletian, and that the *Notitia* was compiled under Constantine.

As the Regionary Catalogues attest, these fourteen regions were used continuously until at least the fourth century.[82] The definitive boundaries of the fourteen regions remain a subject of debate because we simply do not have enough evidence to confirm how far regions on the periphery extended before the area was considered *extra urbem*, outside the city. In fact, the regional boundaries must have been dynamic, changing over time to accommodate demographic changes in the city. Regardless, the *Regionnaries* preserve the names of some Claudian structures, like the Porticus Minucia Frumentaria. Although it is not straight forward.

1.2.3 Numismatic Evidence

The numismatic evidence for Claudius' reign is plentiful and serves as a source of information for the kinds of messages the state desired to circulate through Rome. For the purposes of this study, I focus on coins struck in imperial mints rather than local provincial mints. This restriction places emphasis on the obverse and reverse types most likely circulated in the city of Rome.[83] The imagery depicted on Roman coins was much more dynamic than on modern coins because there was not a standard heads and tails design. The variety of images circulated on coins throughout Rome and the provinces have led scholars to understand numismatic evidence as synonymous with

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[82] Proof that the region names were not given during Augustus' reign is that the name of Region IV "Templum Pacis" derives from a building that was not built until the reign of Vespasian (69-79).
[83] See Heuchert 2005, 29-44 for a useful introduction to Roman provincial coinage.

"propaganda."[84] Yet propaganda is a loaded modern term that conjures up the assumption that the issuing authority intended to persuade the intended audience of something. I follow Wallace-Hadrill's example and others and avoid using the word "propaganda," instead using Carlos Noreña's term "communication."[85] Whether or not the audience was aware of the images depicted on coins, the selection of images for low and high denomination coinage represents a deliberate choice by the issuing authority. Some message was meant to be spread through the imagery. Under the Julio-Claudian emperors, especially Tiberius, Caligula, and Claudius, new coinage was not consistently produced, but instead minted in short bursts when necessary.[86]

One potential use of iconography on Roman numismatics is for the reconstruction of ancient buildings that are lost or partially lost to the archaeological record. But this assumes that the ancients designed monumental reverses in the manner of a photograph, a snapshot of what the building looked like.[87] Where it is possible to compare the images of structures depicted on coins, which I call monumental reverse types, to extant archaeological remains, it is clear that precise renderings were not the

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[84] See Grant 1952, 8 for example.
[85] Wallace-Hadrill 1986, 68; Noreña 2011, 248-49.
[86] Butcher and Ponting 2005, 167 look specifically at the silver denarius issues of Claudius and show that they were not issued continuously, but rather in 41-42, 43-45, 46-47, 49-52.
[87] The earlier scholarly opinion was that monumental reverse types were a contemporary snapshot of the structure; see Hill 1989, Price and Trell 1977, and Fuchs 1969, for example.

aim of the die carver.[88] A circular temple to the god Mars Ultor shows up on coins dating to around 19 BCE, but according to the archaeological evidence the Temple of Mars Ultor in the Forum of Augustus was a rectangular, octastyle temple that was not dedicated until 2 BCE.[89] This is one among many examples of building reverse types that predate the completion of the monument itself.

The Arch of Claudius from the Via Flaminia may be an example of a coin depiction predating the monument itself. Claudius returned victorious from his campaign in Britain in 43; around the same time coins were minted depicting a single-barreled arch surmounted by a triumphal *quadriga* with *de Brittan(is)* inscribed in the architrave (Fig. 2). Epigraphic evidence does confirm the construction of the British victory arch but dates it to 51/52, long after the first issue of the arch reverse type in 46 (*CIL* 6.920-923 = 31203-4). Harriet Flower has argued that the arch may have been erected in 46 with Messalina included, and was later reworked after Messalina's adultery and death.[90] While certainly not ancient photographs of Rome, monumental reverse types from the Claudian period can still tell us about what was built during the

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[88] Burnett 1999.
[89] For more on the Temple of Mars Ultor in the Forum of Augustus, see *LTUR* 4.289-95, s.v. "Forum Augustum," (V. Kockel).
[90] Flower 2006, 186-87.

time. Compared to Augustus and Nero, Claudius issued fewer coins representing monuments in the city of Rome.

Figure 2: *Denarius* of Claudius depicting an arch celebrating the victory in Britain, dating to 46-47. (RIC 1² 34)[91]

It is also important to consider iconography on coins beyond the monumental types. For example, Claudius' attention to the grain supply was clearly advertised on coins, particularly those of lower denominations like the *as* and *dupondius*. In Chapter 2, I argue that the minting of grain supply imagery on only low denomination coins reflects the intended audience: those affected by the grain shortage in Rome at the time of Caligula's death. At various points throughout this study, numismatic evidence will offer another angle to approach the circulation of imperial messages.

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[91] Obverse: Ti(berius) Claud(ius) Caesar Aug(ustus) p(ontifex) m(aximus) tr(ibunicia) p(otestate) VI imp(erator) XI. Reverse: De Brittan(ia).

1.2.4 Epigraphic Evidence

Inscriptions provide some of the best evidence for Claudius' reign, particularly for the study of building and infrastructure. From the period examples of monumental arches, riverbank and pomerium boundary stones, mile-marking *cippi*, Senate decrees, and dedicatory inscriptions are preserved, some *in situ*. In many cases, the epigraphic evidence converges with the literary evidence, allowing both sources to either complement or contradict one another. For example, a *Senatus Consultum* found in Herculaneum in the seventeenth century and now lost, now known as the SC Hosidianum, records a ruling from 47 meant to prevent people from buying buildings in Rome only to tear them down for profit (*CIL* 10.1401 = *ILS* 6043).[92] The senate had a long history of regulating the demolition of houses in Rome.[93] Osgood argues that the aim of this *Senatus Consultum* is more on image and less on preserving housing for the people.[94] His interpretation is that by tearing down buildings, these enterprising Romans were sending the message that the city was not worth preserving. But preserving the city's image and preserving affordable housing do not have to be mutually exclusive aims.

Many of the inscriptions from this period are boundary markers. These *cippi* are made of a slab of travertine and are, typically, around 0.7 meters wide, two meters tall,

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[92] Tortoriello 2004, 420-21.
[93] For example, the senate could decree to have an individual's house demolished as a punishment for crimes. See Roller 2010 for a study of the sociocultural impact of these demolitions in the Roman Republic.
[94] Osgood 2011, 155.

and 0.5 meters thick, with inscribed letter heights between three and eight centimeters tall (See Fig. 38 for an example of a pomerium stone dating to 49). In Chapter 4, I analyze the various categories of extant Claudian boundary stones. Along with care for administrative boundaries, Claudius expanded the sacred boundary of the city, known as the *pomerium*.[95] The process of mapping the many inscriptions highlights their pervasive nature through the city, many of which we must imagine had duplicates, like the *pomerium* boundary and the riverbank boundary. Instances where we have the archaeological evidence to guarantee an *in situ* location for inscriptions allowed me to map and contextualize the evidence.

1.2.5 Archaeological Evidence

Although infrastructure-centered building made less of an aesthetic impact and the Great Fire of 64 destroyed a large part of city as it had been under Claudius, several key pieces of evidence survive in the archaeological record, like aqueducts, arches, utilitarian warehouse structures, and possibly the Claudian portico built for grain distribution. Parts of the Aqua Virgo, the Aqua Claudia, the Aqua Anio Novus, and other buildings remain intact. Points where the conduits rise from the ground atop imposing arches continue to make a visual impact as they snake through the city, as we will see in Chapter 3. Since extant aqueduct channels can be examined and measured,

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[95] For more on the pomerium, see *LTUR* 4.96-105, s.v. "Pomerium," (M. Andreussi).

we can compare modern calculations with those provided by Frontinus in his *De Aquaeductu Urbis Romae*. A recent study by Duncan Keenan-Jones improves the methodology for flow rate calculations by studying the limestone deposits in the channels of the Aqua Marcia. Instead of assuming that the conduits were constantly filled to their maximum volume at all times, we can observe marks left by the wetted perimeter of the channel.[96] Their results suggest that the actual amount of water reaching Rome via the Aqua Marcia was nearly half the total given by Frontinus. Therefore, Frontinus' calculations represent absolute maximums for flow rate and total water supply.

Other structures in the archaeological record from the Claudian period are utilitarian in nature. Archaeologists have identified a warehouse (*horreum*) on the Oppian Hill, under that wing of Nero's Domus Aurea.[97] The three primary proposals for the location of the Porticus Minucia Frumentaria are connected to extant archaeological remains. Having archaeological evidence *in situ* helps us contextualize and visualize Claudian Rome.

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[96] Keenan Jones 2015, 1-2.
[97] Caruso and Volpe 1992, 6.

1.3 The City of Rome in 41

1.3.1 Population and Demographics

To understand and evaluate Claudius' impact on the city and people through infrastructure projects, we must consider Rome's population size and demographic breakdown. The city was not an empty network of streets and structures, as it may look in Italo Gismondi's model of ancient Rome representing the city around 315, so we need to repopulate the densely populated, cosmopolitan space. Determining the population of ancient Rome has proven to be a difficult task.[98] Though we do not possess definitive figures on the population of the capital city under Claudius, Tacitus does note that the census of Claudius and Vitellius recorded 5,984,072 citizens in the Roman empire (*Ann*. 11.25). This number is significantly larger than the 4,937,000 citizens in 14 (Aug. *RG* 8).[99] E. Lo Cascio believes that the population of Italy did not grow between 14 and 47, arguing that the population increase of one million was the result of the expansion of citizen status in the empire and manumission.[100] Walter Scheidel, on the other hand, argues that the rising population trend within the Augustan period, as attested in the

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[98] See the recent and useful summary in Morley 2013.
[99] The census data does not account for the number of non-citizens or slaves living in the empire. Though we cannot corroborate these estimates, Beloch 1886 estimates that there were 2 million non-citizens, while Brunt 1987 estimates 3 million non-citizens.
[100] Lo Cascio 1994.

Res Gestae, would not have stopped simply because the emperor died (Aug. *RG* 8).[101] The population of Rome was larger when Claudius was in power than when Augustus ruled. What can we say about the population of the capital city at the time?

Scholars have taken a variety of different approaches and come to wide-ranging population estimates. Some use the number of *domi* and *insulae* listed in the 4th-century Regionary Catalogues, though G. Hermansen has rightfully questioned whether the "dwelling" numbers in the catalogues were ever meant to be precise.[102] Others have turned to papyri recording the imports of grain from Africa to estimate how many people could be fed on that amount of food.[103] This method requires us to estimate how much grain each person ate, which may or may not have been at basic subsistence level, depending on each person's socio-economic status. From these and other attempts, however, scholars have arrived at a generally accepted estimate for the population of

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[101] Scheidel 2007, 3. Aug. *RG* 8: "I made a census of the people with Marcus Agrippa as my colleague. I conducted a lustrum, after a forty-one-year gap, in which lustrum were counted 4,063,000 heads of Roman citizens. Then again, with consular imperium I conducted a lustrum alone when Gaius Censorinus and Gaius Asinius were consuls (8 BCE), in which lustrum were counted 4,233,000 heads of Roman citizens. And the third time, with consular imperium, I conducted a lustrum with my son Tiberius Caesar as colleague, when Sextus Pompeius and Sextus Appuleius were consuls (14), in which lustrum were counted 4,937,000 of the heads of Roman citizens."
[102] Hermansen 1978; Morley 2013, 36-37 agrees with the skepticism surrounding the use of the Regionary Catalogues to derive population numbers.
[103] Oates 1934.

Augustan Rome, between 800,000 and 1,000,000 people in an area of around 1300 hectares (13 km^2).[104]

Most scholars now agree that the population density of Rome, combined with a resultant high prevalence of disease, forced the city to depend on immigration to keep the city running.[105] With Rome clearly established as the capital city and a general peace through the empire encouraging movement, the population of Rome must have increased in the years following the principate of Augustus. Since the population was dynamic, fluid, and a mix of many cultures, the overall demographic makeup of Rome was likely quite different when Claudius came to power than it had been two generations earlier. The construction of Portus, bringing more merchants closer to the city of Rome, must have contributed to an influx of people from all parts of the empire.[106]

1.3.2 Building and Monumentality

Rome's overall layout and network of streets never matched the regularized orthogonal plans that Roman urban planners preferred when developing new colonies.

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[104] See Morley 2013, 30. Hopkins 1981, 98 considers this range of 800,000 to 1,000,000 as a reasonable population estimate despite the very high population density it produces.
[105] See Scheidel 2009 for more on disease and death in the city of Rome.
[106] The first phase of the synagogue at Ostia dates to the mid-first century, and Squarciapino 1963, 139-40 connects its foundation with the construction of Claudian Portus. Runesson 2001, 81 summarizes the debates on the date of the original building.

If the Roman state was establishing towns on grid-plans as early as the mid-Republic, why did the city of Rome never develop such organization? The hilly landscape of the city, famous for its seven canonical hills—the Capitoline, Palatine, Aventine, Esquiline, Caelian, Quirinal, and Viminal—made the development of a strict grid system difficult. Yet Alba Fucens, a town nestled in the Apennine mountains in central Italy and founded as a Roman colony in 304 BCE, was given an orthogonal plan that paid little attention to the geography of the space. Streets headed straight up steep hills to continue the orthogonal street network. While topography certainly influenced Rome's urban design, Livy implies that the haphazard and hasty rebuilding of the city after the Gallic sack in 390 BCE was the cause of the contemporary city's lack of organization (Livy 5.55). This perceived disorder in the urban plan was the result not of a single moment, such as the Gallic sack, but rather of a city that expanded over time from a hilltop settlement to a major metropolis.[107] Fires, floods, and other disasters meant that parts of the city were frequently being rebuilt. Except for the Great Fire of 64 and the subsequent construction of the Domus Aurea under Nero, Roman leaders did not use disasters to make dramatic changes to the urban plan. Claudius sought to improve the city within the bounds of ancient Roman tradition. As I show in Chapter 4, Claudius recovered

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[107] Ogilvie 1970, 751.

public territory and shored up boundaries, but the sources do not record a large-scale confiscation of property or reorganization of street networks.

As I outlined earlier, public building in Rome was largely neglected between Augustus' death in 14 and Claudius' rise to power in 41. Tiberius only built out of necessity, due to fires and floods, while Caligula was more interested in building for his own personal enjoyment. Claudius' contributions to the city were less grandiose than those of Augustus, but they were still monumental in terms of overall impact and even in physical appearance. Claudius monumentalized infrastructure projects.

What do I mean by the claim that Claudius "monumentalized" infrastructure in the city of Rome? A universal definition for monumentality that can be applied to any civilization throughout history does not exist.[108] The criteria for deeming something "monumental" have often related to the size of the venture. The larger and more ornate the building, the more monumental it was. For example, B. G. Trigger defined a monumental structure as a building for which the scale and decoration surpass what is necessary for practical use.[109] Trigger's concept of scale is not limited to the physical measurements and materiality of a structure. He considers the energy consumed in the creation and maintenance. A structure like the Forum of Augustus and Temple of Mars

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[108] Osborne 2014, 1-19 is a thorough survey of the scholarship on defining monuments and monumentality. This is the introduction to a series of case studies on the topic.
[109] Trigger 1990, 119.

Ultor, completed in 2 BCE, easily fits this definition, but so do the Claudian aqueducts. The towering arches of the Aqua Claudia and Anio Novus, and the Aqua Virgo were constructed with a uniquely Claudian masonry technique called rustication (See Fig. 20 for an example).[110] Rustication, a masonry technique meant to look deliberately roughhewn, was used in Claudian projects and in buildings built in his honor.[111] The style, which may be a reflection of Claudius' antiquarian interests, was not popular beyond Claudius' reign.

The rusticated aqueducts (Chapter 3) are the most visible extant remains of Claudian building, but much of work done is preserved in smaller inscriptions. J. F. Osborne summarizes monumentality as more than just the size and visibility of a structure, but also the "meaning created by the relationship that is negotiated between object and person, and between object and the surrounding constellation of values and symbols in a culture."[112] Perhaps the numerous boundary markers, examined in Chapter 4, could also be considered monumental. The less visible, but vital work

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[110] Claudian rustication was popularized again by fifteenth century Italian Renaissance architects.
[111] Liljenstolpe 2000 discusses in detail the use of rustication in Roman architecture and its reception in 16th century architecture. He suggests that rustication was intended to evoke martial or commercial activities (Liljenstolpe 2000, 70-72).
[112] Osborne 2014, 13. Osborne 2014, 13-14 asks if a small figurine called the Guennol Lioness could be considered monumental. A similarly nuanced definition of monumentality is given in Thomas 2007, 1.

recorded in these inscriptions, like flood prevention and riverbank maintenance, often goes ignored in urban history studies.[113]

In this study, I have used GIS to contextualize the Claudian projects. My visualizations use the Mapping Augustan Rome map by Lothar Haselberger et al. as the base, with the permission of David G. Romano, director of the Digital Augustan Rome project.[114] I have compiled the literary references, inscriptions, and archaeological evidence for the city of Rome under Claudius. When possible, I mapped the *in situ* locations of each inscription. The process of layering the food supply, water supply, and boundary marking projects on top of each other allowed me to see a regional focus for building efforts over the course of Claudius' reign. Bringing smaller inscriptions and seemingly less grandiose building to the forefront of the study of Claudius helps nuance the passive and manipulated character portrayed in the historical primary sources. In this dissertation, I show that Claudian interventions in the city of Rome, primarily through infrastructure, had an important and lasting impact.

Why were certain large-scale infrastructure projects, such as the construction of a safe harbor at the mouth of the Tiber, not attempted before Claudius? The life of study

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[113] Sara Galletti's Paris of Waters project is an example of recent work highlighting the need to study the impact of infrastructure on the history of a city (http://www.dukewired.org/projects/paris-of-waters/).
[114] The Digital Augustan Rome map can be accessed http://digitalaugustanrome.org. My base map was created by scanning the printed 1:6000 scale map from Haselberger et al. 2002.

Claudius lived before having access to a political career may have played a role. Writing extensively on Etruscan, Carthaginian, and Roman history must have given Claudius insight into the recurrent problems facing the inhabitants of an urban center. Ultimately, Claudius' attentiveness to the long-term needs of the urban populace set in motion the developments necessary for the city to sustain its peak population in the 2nd century.

2. A Shortage of Grain: Claudius and the Food Supply

2.1 Introduction

According to Seneca the Younger, when Claudius was named emperor in 41, a mere eight-day supply of wheat was available for the urban population (Sen. *Brev. Vit*. 18.5).[1] This was not the first time that food scarcity threatened the city, nor would it be the last. With some 800,000-1,000,000 people living in Rome, as we saw in Chapter 1, and thus dependent on the grain supply, shortage was a common and frequent concern. In fact, the grain shortage in 41 was not the only example of such an event in Claudius' reign. Both Tacitus and Dio mention another shortage that afflicted Rome in 51 (Tac. *Ann*. 12.43; Dio 41.10). A different perspective on the problem is provided by Suetonius. With his customary lax chronology, Suetonius recounts an anecdote about Claudius being pelted with pieces of bread in the forum by a mob of people, although we cannot definitively assign this to either dated famine (*Claud*. 18).[2]

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[1] Hurley 2001, 141 gives Dio 59.17.2 as evidence for the famine in 41, the claim that Caligula's temporary bridge from Baiae to Puteoli employed so many boats that he caused a famine, particularly in Rome. Most date Caligula's bridge to the summer of 39 (Barrett 1989, 94), but Winterling 2003, 100-104 argues for the summer of 40 as the date. If the bridge was built in the summer of 39, then the famine in January 41 seems too far removed. The famine Dio references in connection with Caligula's bridge may be a separate event, since he describes the grain shortage in 41 as severe but does not cite Caligula's bridge as the cause (60.11.1). Tacitus (*Ann*. 12.43) also writes about Claudius being pelted with bread in the Forum, but in a story dating to 51. I argue that Suetonius has conflated the dating in his passage because he seems to be referring to a shortage at the start of Claudius' reign. It is following the first shortage that we see an outpouring of measures to assure the grain supply, like the construction of Portus and incentives for merchants. Suetonius may have used the story of being mobbed in the forum as a vivid way to show cause and effect in the emperor's actions. See Powers and Thomas 2014 for more on the authorial craft of Suetonius.

[2] Osgood 2011, 182n61 offers bibliography on Suetonius that attributes this event to 51 and not 41.

People may or may not have pelted Claudius with insults and stale bread to express their anger about the lack of grain available in the city,[3] but the story does imply that the collective needs of inhabitants in Rome could incite change. Suetonius chose to underscore the imperial government's responsiveness to the people's requests and desires under Claudius. By offering incentives to those who could assure grain imports arrived in Rome in a timely manner, Claudius sought a long-term solution to a common problem in the city.

Many scholars have written at length on the history of the *annona*, the food supply in Rome.[4] Since these studies have not been challenged by any significant new findings, I focus on how the efforts put in to improve and advertise improvements to the *annona* of Rome during Claudius' reign changed and shaped the urban landscape of the city.[5] Urban design during the Claudian period was very much influenced by the needs of the masses, not simply power architecture for the sake of grandeur and aggrandizement. Over the course of his reign Claudius monumentalized infrastructure

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[3] According to Appian, Octavian was pelted with stones during a food shortage in 38 BCE (App. *BC* 5.67-68). Hurley 2001, 141 suggests that the mob pelting Claudius with bread crusts, rather than stones or other non-food related products, gives Suetonius' story a comical tone.
[4] Van Berchem 1939, Rickman 1980, and Virlouvet 1995 are a few of the seminal works on the grain supply and its distribution in Rome. See Erdkamp 2005 for more on the grain market in the Roman empire.
[5] The term *annona* refers to the food supply of Rome in general and not the free monthly distributions of grain. Bernard 2016, 50 uses the term *frumentationes* for the grain dole to distinguish it from *annona*.

projects related to the grain supply even as he attended to ensuring a predictable supply itself.

Grain, olives, and wine were the primary components of the ancient Roman diet, with grain making up about two-thirds of the total.[6] References in literary sources tend to speak about grain (*frumentum*) and bread (*panis*), like the famous "bread and circuses" line in a satire of Juvenal (10.81: *panem et circenses*), while other food stuffs are rarely mentioned,[7] except by those speaking about the dining habits of the upper classes.[8] Grain made up the bulk of the ancient Roman diet because it was a relatively cheap source of caloric intake, though deficient in supplying some key nutrients.[9] Grain was publicly sponsored since 123/122 BCE, whereas other foodstuffs were not publicly supplied until Septimius Severus added pork to the monthly dole in the early 3rd century and Aurelian added olive oil in the late 3rd century.[10] Because the focus of this project is on the food supply of the general populace, grain will be at the center of my discussion but I understand that the *annona* was not limited to grain. The state also worked to

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[6] Aldrete and Mattingly 1999, 172.
[7] Erdkamp 2013, 262.
[8] For example, the story of Trimalchio's dinner party in Petronius' *Satyricon* (36). Though because of the satiric genre of the work, the extravagant nature of the dinner is a hyperbolic treatment of a wealthy dinner. See Donahue and Gold 2005 for a series of studies on Roman dining practices, and Gower 1997 for a study of Roman culture via representations of food in literary sources.
[9] Rickman 1980, 262.
[10] The *annona* included only allotments of grain until Septimius Severus added olive oil (SHA *Sev*. 18.3). Aurelian later added pork to the monthly allotments (SHA *Aurel.* 35.2).

assure a steady supply of other products to the markets of Rome to be sold at reasonable prices.[11]

Following a survey of historical background and sources on the grain supply of Rome, I analyze the visual, spatial, and legal changes. I also assess the practical impact made on the infrastructure of farming, with Claudius' attempt to drain the Fucine Lake. I further survey shipping, with the construction of Portus, the Tiber river infrastructure, and Claudius' incentives to merchants. The final section attends to distribution, with bringing the distribution of state publicly supplied grain allotments to a central location, the Porticus Minucia Frumentaria, and adding warehouses to the city. We will follow these improvements from farm to table, so to speak.

The role of Claudius in transforming the *annona* for the city has been downplayed, especially the free grain distributions,[12] but my close analysis of the projects in this order shows an organized program for improving provisioning the city from growing the crops to distributing them to the people.

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[11] Aldrete and Mattingly 1999, 179.
[12] Rickman 1980, 214-215.

2.2 The Grain Supply in Rome: A Brief History

Outlining a basic history of the grain supply to the city of Rome up through the early principate will help contextualize and evaluate the changes that took place during Claudius' reign. The first recorded law related to government-subsidized grain supply of the city, the *Lex Sempronia Frumentaria*, was initiated by Gaius Gracchus in 123 BCE (App. *BC* 1.21). This law, however, was not designed to provide free grain to individuals, but rather to assure that grain could be sold at an affordable price to the people of Rome.[13] Later grain laws during the late 2nd and early 1st century BCE could not continuously guarantee grain at affordable prices.[14] It has been estimated that by 73 BCE, only around 40,000 individuals were receiving subsidized grain.[15] Soon thereafter grain distributions became an important political tool in the civil wars.[16]

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[13] Specifically, that the grain would be sold at a price of 6 and 1/3 asses per modius (Duncan-Jones 1982, 145-46). None of our evidence for Gaius Gracchus' grain law is contemporary, so we turn to the writings of later authors like Appian (*BC* 1.21) and Plutarch (*C. Gracchus* 5). Garnsey and Rathbone 1985 provides useful background information on the grain law of 123 BCE.

[14] Other grain laws were passed between those of Gaius Gracchus in 122 BCE and Clodius in 58 BCE, including the Lex Octavia in the 90s and the Lex Porcia in 62. For a thorough treatment of the grain supply of Rome during the Republic, see Rathbone 1985, 20-25.

[15] Garnsey 1988, 212 and Rickman 1980, 166 estimate 40,000 dole recipients in 73 BCE, from Cicero's claim that the *plebs frumentaria* could be fed on grain from Sicily (Cic. *Verr.* 5.21.52).

[16] Livy records a grain shortage in 492 BCE, in the midst of the struggles between the patricians and the plebs. Marcius Coriolanus tried to convince his fellow senators to withhold the grain supply as a means to convince the plebs to turn over the powers of the tribuneship (2.34-35). Ogilvie 1965, 222-23 argues for the authenticity of the grain shortage at this time because this is when the cult of Ceres supposedly was established in Rome but notes the similarities of language and rhetoric between Coriolanus' speech and late Republican politics. The use of the grain shortage in 492 as a political tool in the Struggle of the Orders is likely anachronistic.

Thus, in 58 BCE, Publius Clodius Pulcher, now famous for his feud with Cicero, proposed a revolutionary measure to guarantee free distribution to qualifying citizens above the age of ten.[17] Though popular among the masses, Clodius' version of the grain dole was difficult for the state to assure and afford. Cassius Dio viewed this law as a means to garner support of the populace, more than a desire to keep the public safe, in a judgement that surely repeats some contemporary invective of the late Republic (Dio 38.13). In 46, 360,000 adult male citizens qualified for a monthly allotment of grain. This was measured in a *modius*, which was a standard dry-measure vessel holding 16 *sextarii* or one peck (about 2.3 gallons). Each month qualifying male citizens received five *modii*, enough for two people to survive at subsistence level.[18] However, many of the grain dole recipients, especially those with children, would have been trying to stretch this amount to feed more than just two individuals.

The logistics of Clodius' grain law were too difficult to support long-term, prompting Julius Caesar to reduce the number of people qualifying from 360,000 to between 150,000 and 200,000, around twenty percent of the city's population, if we assume that the population was around one million in the mid-1st century.[19] Since the

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[17] Aldrete and Mattingly 1999, 162.
[18] Duncan-Jones 1974, 147 provides information on the caloric values of grain.
[19] Aldrete and Mattingly 1999, 178. To keep the number of recipients steady, Suetonius describes an annual drawing of lots by the praetor to replace those who died (*Caes.* 41).

allotment could sustain two people at subsistence level, around forty percent of the population received free grain from the government in the late first century BCE.[20] Yet these government-subsidized grain distributions were not a tool designed to alleviate poverty because only adult male citizens qualified, and as we saw above, the distributed wheat could not possibly have sufficed for a man with a larger family.[21] The recipient would also have to procure the funds to mill and bake the bread as well as buy other meal supplements like fruits and vegetables.[22] A significant number of slaves, women, children and non-citizens, who did not qualify for free grain distribution, also populated the city.[23] How would these groups have access to sufficient sustenance? Those excluded from the free grain distributions could obtain grain directly from warehouses or markets.

Possessing control of the grain supply was known to be a powerful political tool. This led to the decree, passed in 43 BCE, that required more than one person be in

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[20] As the population grew from the first to the second century, the percentage of the population sustained by free grain distributions would have gradually decreased.
[21] The age of qualification for grain distributions did not remain the same throughout Roman history. Rickman 1980, 8 gives the age of 14 as the "age of qualification" for free grain allotments. Suetonius mentions Augustus not excluding *minores pueros* from a distribution of largesse, which they usually only received after 11 years of age (*Aug*. 41).
[22] Rickman 1980, 173.
[23] Some have suggested that the free grain distributions attracted migrants into the city. Bernard 2016 argues against a connection between the *frumentationes* and the influx of immigrants into the city.

charge of the grain supply at any one time (Dio 46.39.3).[24] Sometime between 8 and 14, Augustus created the office of *praefectus annonae*,[25] an equestrian position that ranked behind only the prefect of Egypt and the Praetorian Prefect.[26] The *praefectus annonae* had to serve as a liaison between grain merchants, warehouse officials, and the imperial government. During the Republic a quaestor was appointed to oversee the naval fleet and merchant activity at Ostia. This post would change under Claudius.

In 22 BCE, during the reign of Augustus, Tiberius struggled with his duties as the quaestor posted in Ostia to alleviate famine in the city (Suet. *Tib*. 8),[27] forcing Augustus to step in and offer a quick albeit temporary fix (Dio 54.1.3; Aug. *RG* 5.2). This fix involved Augustus using his own money (*RG* 5.2: *impensa et cura mea*) to buy up additional stores of grain.[28] Temporary fixes usually entailed the emperor purchasing additional crops for the city when available. The actions of Claudius exhibit less interest in temporary fixes, and more interest in long-term improvements to the city's grain supply. Likely coinciding with the decision to construct the harbor at Portus, Claudius

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[24] Rickman 1980, 263.
[25] The date range of 8-14 derives from a passage of Tacitus' *Annals* (1.7).
[26] Robinson 1992, 148.
[27] Robinson 1992, 150.
[28] Cooley 2009, 129 summarizes and provides relevant bibliography on Augustus' role in managing the grain supply in Rome. The ability to quickly provide grain to the people, as Augustus puts it "in a few days" (*dies paucos*), implies that someone already had stores of grain on hand in the city. Either Augustus/the state had been collecting a surplus in case of emergency, or more cynically in case the populace needed to be controlled, or others had been hoarding excess grain (Rich 1990, 172 on Cassius Dio's account of this shortage).

replaced the Ostian quaestorship with a group of officials under the authority of the *praefectus annonae.* Suetonius indicates that the Ostian quaestors were reassigned to oversee the treasury at the Temple of Saturn in Rome (*Claud*. 24.2). The new officials were called the *procurator annonae Ostiensis* and the *procurator portus*.[29] These posts could be held by imperial freedmen, a deviation from the senatorial oversight provided by the quaestor in the past.

2.3 Sources for the Food Supply in Rome under Claudius

2.3.1 Literary Evidence

Literary evidence provides some of our best information on the grain supply of Rome and its impacts. As we saw above, biographical and historical sources record some of the food shortages and the reaction of the masses to such scarcities. For Claudius' reign, Suetonius, Tacitus, and Dio are the main historical sources, while Pliny the Younger and Seneca the Younger offer more contemporary accounts in different genres of writing. Unfortunately, however, the literary sources tell us very little about the micro-scale mechanics of the grain dole or the movement of grain within the city from warehouses to the homes of not only the *plebs frumentaria*, but also the general populace who did not qualify for the dole. Since the authors of the literary sources were

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[29] Robinson 1992, 150. A second century inscription on a marble statue base in Ostia is dedicated to a *procurator annonae Ostiensis* (*CIL* 14.2045). The individual who held this position was an imperial freedman.

men of the elite class and not interested in such minutiae, especially when the details did not pertain to their own status, we must turn to other types of sources to gain a different perspective and to fill in some of the details.

2.3.2 Numismatic Evidence

Numismatic evidence can corroborate or contribute new information to the literary accounts of the grain supply in Rome. It allows us to examine what the central authority intended to communicate to the people about the food supply.[30] My methodology for using numismatic evidence as a historical source is discussed in detail in Chapter 1.[31] As I explained, I focus on coins produced in imperial mints, which circulated primarily in Rome, Italy, and the western provinces.[32] The coins I analyze in this section are predominantly low denomination bronze coins, which rarely circulated outside of the Italian peninsula.[33] I am concerned with the coin types, that is the combination of imagery and text on the obverse and reverse, and not the economics

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[30] For more on Roman numismatics and its role in communication, see Noreña 2011. Wolters 2012, 342 urges us to avoid overemphasizing the communicative abilities of coins, and instead to understand the imagery as contributing to communication when combined with other media. Duncan-Jones 2005, 471 argues that the Romans were not interested in using coinage as a means of disseminating information.
[31] See Chapter 1, pp. 38-41.
[32] Coins minted during the Roman Principate are divided by modern scholars into two categories: Roman Imperial Coinage and Roman Provincial Coinage. Given the scope of my project, I am more interested in coins that circulated in the city of Rome, thus "Roman Imperial Coinage." Very little provincial coinage would have circulated in Rome under Claudius.
[33] The *quadrantes*, worth a quarter of an *as* and the smallest denomination of the Augustan reforms, in particular have very rarely been found outside the Italian peninsula (Wolters 2012, 345).

behind their production and use. I argue that the low-denomination coinage of Claudius emphasizes work done to improve the grain supply in Rome. The direct, unambiguous depiction of a *modius*, the iconic symbol for measuring grain, which first appears as the central image of a coin under Claudius, set a trend for future emperors to follow.[34]

In 42, the year following the first food shortage of Claudius' reign recorded in the literary sources (Sen. *Brev. Vit*. 18.5; Dio 60.11.1), Claudius' attention to grain was clearly marked on coins, particularly those of lower denominations like the *dupondius* and *quadrans*. One coin type that ties to the grain supply shows the goddess Ceres Augusta on the reverse of a *dupondius*, a brass coin worth 2 *asses* (Fig. 3). Ceres Augusta is seated on a throne, holding out an ear of grain with her right hand. The association of the beneficent goddess with the regime is suggested by her epithet Augusta.[35]

Another Claudian coin type related to grain (Fig. 4) is unique because it is the first extant imperial coin featuring a modius, the container used to measure allotments of grain. This coin is a quadrans, which was worth one quarter of an as, making it the

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[34] The *modius* appears in earlier imperial coin types, but as one small piece of a larger composition, not the central image. RIC 1^2 313 shows a *quadriga* pulling what Sutherland 1984, 63 describes as a "modius shaped car with three ears of corn protruding."

[35] See Boatwright *forthcoming* (coins as historical evidence for imperial women) for more on the connection between imperial women and coin reverse types with divinities given the epithet Augusta. There may also be a connection here between Ceres and Livia.

smallest denomination regularly minted during the Roman principate. With the modius as the only image depicted on the coin, the emphasis lies on grain provisions and not on a portrait of the emperor or even an abstract personification of grain, through Ceres.

Did the minting officials in Rome target people of a lower socio-economic status with grain-focused imagery on low denomination coinage? Reinhard Wolters argues against the concept of targeted messaging on base metal coinage because coin finds in archaeological contexts, coin hoards for example, include mixtures of coins from all denominations.[36] Wealthy individuals were not exclusively handling gold and silver coinage and lower status individuals were not only handling bronze coinage. I argue that the reality of coin circulation cannot disprove that reverse types were designed with an audience in mind.

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[36] Wolters 2012, 345; Wolters 2000/1, contra Wigg 1997. A coin hoard is a group of 2 or more coins collected and stored together for a specific purpose.

Figure 3: *Dupondius* of Claudius depicting Ceres, seated, holding out an ear of grain, dating to 42. (BMC 197)[37]

Figure 4: *Quadrans* of Claudius depicting a modius used to measure grain, dating to 42. (RIC 1² 84)[38]

William Metcalf observed on Julio-Claudian coinage that *liberalitas* was represented by a personification on precious metal coinage and by a *liberalitas* scene of

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[37] Obverse: Ti(berius) Claudius Caesar Aug(ustus) p(ontifex) m(aximus) tr(ibunicia) p(otestate) imp(erator) p(ater) p(atriae). Reverse: Ceres Augusta [ex] s(enatus) c(onsulto).
[38] Obverse: Ti(berius) Claudius Caesar Aug(ustus); Reverse: co(n)s(ul) desi(gna)t(us) pon(tifex) max(imus) [ex] s(enatus) c(onsulto).

an emperor handing goods over to the people on base metal coinage.[39] Similarly, Annalisa Marzano's study of public building imagery on lower versus higher denominations of Trajanic coinage makes a similar case for intended audiences.[40] Public spectacle buildings were found on lower denominations, while elite administrative buildings, like the Basilica Ulpia, were depicted on higher denominations.[41] Imagery of the goddesses Ceres or Annona appear on all denominations under Vespasian, Trajan and Hadrian, but never appear on gold or silver coinage under Claudius. The Claudian period, then, may have been a time when the imperial court and minting officials were more interested in audience targeting.[42]

Someone in the imperial government, communicating with the mint in Rome, decided that the early bronze coin issues of Claudius' reign should center on the grain supply. Bronze coins apparently had less mobility, so if not a lower status audience, we can argue that the imagery was aimed at the residents of the city of Rome. The modius was an iconic symbol of grain measurement, which comes to represent the grain trade in

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[39] Metcalf 1993.
[40] Marzano 2009.
[41] The argument for targeted imagery is stronger for the Trajanic period, because coins of all denominations were produced in Rome's mint. During the Julio-Claudian period, gold and silver coinage were produced at a mint in Lugdunum, Gaul, and bronze coinage was produced in Rome. Beckmann 2012, 406-407 gives a summary of the evidence for the organization of the mint under Trajan and Hadrian.
[42] Hekster 2003, 23 suggests that we not be quick to discount audience targeting just because the patterns are not universal across all periods. Audience targeting for coins should be studied within a certain reign or dynasty instead.

general.[43] The literal imagery on the *quadrans* differs from personifications of grain through Ceres. The only denomination the *modius* appears on during Claudius' reign was the bronze *quadrans*, and only one other image appeared on the quadrans coinage under Claudius.[44]

Rickman warns against placing weight on the modius reverse type from Claudius' reign as evidence of the imperial government communicating a message to the people about grain surety. He argues that the message would have been lost among the other reverse types minted early in Claudius' reign, specifically the praetorian guard type.[45] This reverse type, an example of which can be seen in figure 5, depicts the praetorian barracks in Rome with a soldier standing at the top holding a spear in his right hand. Emblazoned across the wall of the praetorian barracks is the legend *imper(atore) recept(o)*, referring to the praetorian guard's proclamation of Claudius as emperor in the wake of Caligula's assassination. But while this reverse type was

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[43] For example, several of the mosaics in front of stalls within the Piazzale delle Corporazioni in Ostia use a modius to represent that particular guild's role in the grain trade. The extant mosaics date to the Severan period (Coarelli 2007, 457).

[44] RIC 1^2 91 = BMC 174. The coin is a *quadrans* of Claudius dating to 42 with a hand holding scales on the obverse. The other *quadrans*, also dating to 42 with the identical reverse type of *s(enatus) c(onsulto)* in a larger font, surrounded by Claudius' titulature, hints at another problem left for Claudius at the start of his reign, namely restoring the value of Rome's coinage. This coin has the same legend as the modius coin, but instead, in the center, a hand holds a pair of scales with the letters *PNR* inscribed in between. The *PNR* has been interpreted as p(ondus) n(umi) r(estitutum), the weight of coinage restored. Stevenson (Dictionary of Roman coins). Though in the minority, Haverford thinks the abbreviation stands for p(ondus) n(umi) r(omani). Wolters views this coin as an announcement of tax measures, for the city, and perhaps for the larger Italian peninsula (Wolters 2012, 345).

[45] Rickman 1980, 75. This argument is repeated in the index of Rickman 1980 on "Corn and Coins."

prevalent on coins of higher denominations, the *aureus* and *denarius*, it did not appear at all on surviving coins of lower denominations. The lower-status individuals of Rome were probably less interested in who was named emperor or by which authority the position was granted, and more interested in accessibility of food.

Figure 5: *Denarius* of Claudius depicting the Praetorian Camp in Rome, dating to 43-44 (RIC 1² 20).

The modius type appears again on the extant coinage of Vespasian, Domitian, and Nerva.[46] The reprisal of this image, I argue, hearkens back to the Claudian coin. There is a tendency in the scholarship to interpret the actions of subsequent emperors as emulations of Augustus, but very few living during the Flavian dynasty were alive during the reign of the first princeps. Although the Flavians likely used Augustus as a

[46] For Nerva, see RIC 2.109-113, with Brennan 1998, who views the reign of Nerva as a turning point for the relationship between the people and the emperor. Nerva gave some power back to the Senate in the control of the grain supply, which had been brought under imperial control under Claudius. Rickman 1980, 213-17, however, argues against Claudius bringing the grain supply under complete imperial control.

model to a certain extent, I argue that by using the same reverse type, with clear connections to the grain supply in the city, minting officials were attempting to look back to the last "good" emperor in recent memory.[47] And for the Flavians, that "good" emperor was Claudius.[48]

2.3.3 Other Ancient Evidence

Though compiled in the fourth century, the Regionary Catalogues remain a valuable source of information for scholars of Roman topography. The entry in them that is important for this chapter is a building called the *Porticus Minucia Frumentaria*, which both catalogues list in Region IX, the Circus Flaminius. In the Curiosum, the entry reads "*Minuciam Veterem et Frumentariam*." In the Notitia, the entry reads "*Minucias duas veterem et frumentarium*." As we will see below, this evidence, albeit at first sight apparently tautological, has been interpreted in several different ways. There is little consensus in the scholarship as to where the portico for grain distribution was located, or if the Frumentaria was even a separate building from the Vetus.[49] What we can conclude is that the center for the distribution of the grain allotments was still

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[47] The concept of a "good emperor" versus a "bad emperor" seems to be driven by the biographical genre. One key difference between emperors with good and bad legacies is their contribution to public building in the city of Rome.
[48] Vespasian was a contemporary of Claudius, and his career in Roman military and political life really accelerated under Claudius. He was appointed to command a legion in Germany and was then transferred to Britain (Suet. *Vesp.* 4.1).
[49] Coarelli 1968.

standing in the western section of the Campus Martius during the late Empire, which speaks to its location in a vibrant area of the city that maintained good roads and other communications.

Epigraphic and archaeological evidence for the grain supply in Rome is both informative and cryptic at the same time. Recent excavations at Portus have brought to light more information on the design of Claudius' port and its connection to Rome.[50] The structure in Rome presumably built during Claudius' reign for distributing grain, the *Porticus Minucia Frumentaria*, is indirectly attested in epigraphic sources but difficult to pinpoint precisely in the archaeological evidence. I will consider various theories for its location below in the context of other Claudian initiatives.

2.4 Practical Impact and Visual Commemoration of Food Supply Improvements

The assembled evidence strongly suggests that efforts were made during Claudius' reign to improve the grain supply of the city of Rome, from growing the crop to shipping it, and finally the monumentalization and logistics of its distribution to the people. Showing how Claudius initiated projects early in his reign to assure the grain

[50] See Keay and Paroli 2011 for a series of studies based on the recent excavations at Portus.

supply at every level, I argue that we see the concerted effort of an emperor and of the imperial government in general to be proactive rather than merely reactive.[51]

2.4.1 Farming: Fucine Lake Draining Attempt

One of the most ambitious, but only partially successful, projects undertaken by Claudius was the draining of the Fucine Lake. The Fucine Lake was a shallow body of water located in central Italy about 50 miles east of Rome (see the map of central Italy, Fig. 1). Surrounded by mountains and fed by rainwater and snowmelt, the lake had no natural outlet for drainage. This situation made the people settled along its banks subject to unpredictable flooding (Strabo 5.3.13) and its consequences; destruction of property, water-borne gastrointestinal diseases, and malaria.[52] One group living adjacent to the Fucine Lake, an Italic people called the Marsians, asked Augustus to help alleviate the problems caused by the lake's unpredictable flooding (Suet. *Claud* 20.1).[53] Suetonius notes that Augustus refused the Marsians' frequent entreaties, highlighting the difficulty of the task and implicitly contrasting the inaction of Augustus with the initiative of Claudius.

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[51] Millar 1992 argues that the emperor was reactive rather than proactive in running the empire.
[52] Aldrete 2007, 91-128 surveys the ancient evidence for the immediate impact of flooding in Rome.
[53] Suet. *Claud*. 20.1: *quamquam sciret ex iis alterum ab Augusto precantibus assidue Marsis negatum*. Nothing else is known about the relationship between Augustus and the Marsi (Hurley 2001, 144).

Undeterred by the difficulty of the endeavor, Claudius initiated work to dig a drainage channel from the lake to the nearby Liris River. Successfully draining the lake had the potential to earn Claudius more than just the gratitude of the Marsians. Draining the entire Fucine lake would uncover around 140 square kilometers of fertile farmland.[54] Dio mentions a secondary benefit gained from draining the lake, namely improving the navigability of the Liris River (Dio 60.11.5).[55] The massive undertaking is described or touched on by numerous authors. Suetonius characterizes this task as both a practical undertaking and a means of attaining glory:

> *Fucinum adgressus est non minus compendii spe quam gloriae, cum quidam privato sumptu emissuros se repromitterent, si sibi siccati agri concederentur. Per tria autem passuum milia partim effosso monte partim exciso canalem absoluit aegre et post undecim annos, quamvis continuis XXX hominum milibus sine intermissione operantibus.*
>
> He made the attempt on the Fucine lake as much in the hope of gain as of glory, inasmuch as there were some who agreed to drain it at their own cost, provided the land that was uncovered be given to them. He finished the outlet, which was three miles in length, partly by levelling and partly by tunneling a mountain, a work of great difficulty and requiring eleven years, although he had thirty thousand men at work all the time without interruption. (Suet. *Claud*. 20; trans. Rolfe)

Suetonius states that the Fucine lake project took eleven years to complete. Tacitus marks the completion of the channel in 52. If Tacitus' dating is correct, then the

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[54] These figures come from a quantitative study in Thornton 1985, 106.
[55] The Liris River flows from the central Apennines near Alba Fucens and the Fucine Lake to the Tyrrhenian Sea just south of Minturnae at the border between Lazio and Campania.

construction began in 41 (*Ann*. 12.56), at the beginning of Claudius' reign. This coincides with the city's food shortage recorded by Seneca and Dio (Sen. *Brev. Vit*. 18.5, Dio 60.11.1). As seen in the passage above, Suetonius claims that 30,000 people worked continuously for eleven years on the project. M. K. and M. L. Thornton's quantitative study of Julio-Claudian building projects tested the accuracy of Suetonius' figure.[56] While they confirmed the plausibility of the project's time to completion, they argue that the number of laborers working on the tunnel at any one time could not have exceeded 3,000.[57] The 30,000 figure may have been mere hyperbole on Suetonius' part, intended to underscore the scale of the project, or the number may have included everyone tangentially related to the effort, like administrators and suppliers, not just the people working on the tunnel at any one time.[58]

The fact remains that draining the Fucine Lake offered a wide variety of benefits in terms of protection for a local populace, additional farmland for growing much needed resources, and a near continuous stream of work for laborers.[59] These laborers

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[56] Thornton and Thornton 1989, 61-67.
[57] Thornton and Thornton 1989, 70.
[58] Debate surrounds the meaning of the adjective *continuis* in the passage. Hurley 2001, 146 instructs the reader to translate *continuis* as an adverb using "continuously" in English and deems the 30,000 men figure untenable. Thornton and Thornton 1989, 71n.38 suggest using one of the other meanings given for *continuus*. When referring to men the adjective can mean "assiduous and unremitting." Instead of imagining 30,000 men working at the same time, they would be 30,000 hard working men.
[59] Bernard 2017, 64-69 discusses the Roman labor market for the imperial building industry. Forced labor seems to have been utilized primarily in the provinces.

seem to have ranged in level of specialization and in status. Seth Bernard identifies three general categories of Roman laborers: slaves, unskilled casual labor, and forced labor, with slaves being the most likely to be specialized.[60] In the city, through oral advertisement potential workers may have gathered in areas where potential employers could seek them out. Speculatively, Claire Holleran suggests that a passage from Suetonius in which Claudius orders a crowd of slaves and *operarii* away from the rostra may be one of those gatherings (Suet. *Claud*. 22).[61] Since there were several massive infrastructure projects operating at the same time, there must have been high demand for workers.

Tacitus chose to emphasize not the potential benefits of the project, but instead highlights the extravagant celebration marking the inauguration of the channel and the ultimate failure of the original enterprise (Tac. *Ann*. 12.56-57).[62] In the narrative, he compares the spectacle to Augustus' earlier staged battle in the Naumachia in Rome's Transtiberim (*Ann.* 12.56). According to Tacitus, Claudius' spectacle on the Fucine Lake was much larger and magnificent in scale, drawing people from Rome and nearby

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[60] Bernard 2017, 65 points to the columbarium of the Statilii Tauri. The inscriptions preserved within this place of burial included many slave and freedmen builders.
[61] Holleran 2017, 91-92.
[62] Kief 1973 highlights Tacitus' stylistics means to undermine Claudius' achievements here.

towns, seated on the hillsides as though in a theater.[63] Full sized naval vessels were pitted against each other, and over 19,000 men, mostly condemned criminals, engaged in combat that resulted in bloodshed. After the naval battle, the drainage channel was opened. Chaos then ensued after its initial opening because it was not designed correctly (*Ann*. 12.57). In particular, Tacitus notes that the channel was not dug as low as the bottom of the lake, rendering complete drainage impossible. Tacitus' account of this event ends with Agrippina taking advantage of Claudius' fear to reprimand Narcissus for avarice and embezzlement of funds, and Narcissus in turn reproaching Agrippina for excessive ambition (*Ann.* 12.57).[64]

Although of course we cannot ascertain motivations of an emperor, the primary intention may have been more about providing benefaction than gaining a great reputation. Back amidst the chaos of the start of his reign as he tried to establish his authority, Claudius was probably not thinking about the elaborate spectacle he would put on eleven years later to commemorate the completion of a drainage channel. Tacitus ends up attributing the ultimate failure to the misappropriation of funds by Narcissus, a freedman of the emperor who skyrocketed to a position of great power in Claudius' court. Dio, writing long after Claudius' death, concludes his description of Claudius'

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[63] Tac. *Ann.* 12.56: *ripas et collis montiumque edita in modum theatri multitudo innumera complevit*.
[64] Tac. *Ann.* 12.57: *simul Agrippina trepidatione principis usa ministrum operis Narcissum incusat cupidinis ac praedarum. nec ille reticet, impotentiam muliebrem nimiasque spes eius arguens*.

attempt on the Fucine Lake by remarking that the money was spent in vain (60.11.5: μάτην δὲ δὴ ἐδαπανήθη). Pliny the Elder, who was known to favor Claudius, on the other hand, ranked the Fucine lake project as the greatest undertaking of his reign, despite its flaws in design (Plin. *HN* 33.63). Pliny instead criticizes Nero for not continuing work to complete the project, and views the act of tunneling the channel through the mountain as an engineering marvel beyond what words could capture.

Resuming work on the Fucine Lake tunnel, Trajan (*CIL* 9.3915 = *ILS* 302)[65] and Hadrian (SHA *Hadr.* 22.12) understood that there were benefits to be gained from improving the design of the conduit and uncovering additional land. A marble base dedicated to Trajan was found near the Church of S. Bartolomeo in Avezzano, a town on the edge of the Fucine Lake in antiquity. According to the inscription, the Senate and People of Rome dedicated the base because Trajan recovered and returned the lands which the Fucine Lake had disturbed. The Trajanic inscription makes explicit that the city of Rome was concerned with the flooding of the Fucine lake, which I believe was the case under Claudius as well. Trajan oversaw at least some work on the Claudian drainage tunnel, and Hadrian either continued or returned to the project. Hadrian also

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[65] *CIL* 9.3915 = *ILS* 302: Imp(eratori) Caesari divi | Nervae fil(io) Nervae | Traiano Optimo | Aug(usto) Germanico | Dacico Parthico | pont(ifici) max(imo) trib(unicia) pot(estate) XXI im[p(eratori) XII] | co(n)s(uli) VI patri patriae | senatus populusq(ue) Rom[anus] | ob reciperatos agros et possess[ores reductos] | quos lacus Fucini violent[ia exturbarat].

sponsored a project to drain lake Copais in Boeotia, Greece, another body of water subject to unpredictable flooding, especially in winter months.[66] The Fucine lake was not completely drained under Hadrian but by lowering the drainage channel additional fertile farmland was exposed.

While Claudius' Fucine lake draining project did not meet initial expectations, the attempt may have been borne out of need for more farmland to support the urban population. Despite the best efforts of Claudius, Trajan, and Hadrian, the complete and permanent drainage was not completed until the 19th century using a plan designed by Swiss engineer, Jean François Mayor de Montricher. The uncovered land from the Fucine Lake remains to this day an extremely fertile region in Italy. Despite not being dug deep enough to secure complete drainage, the ancient drainage tunnel formed the backbone of the one in use today.[67]

With a partial drainage of the lake by Claudius, some farmland must have been uncovered in the process. Paul Erdkamp uses passages in Cicero, Varro, and Columella, and comparative evidence, to estimate grain yield on one *iugerum* of land.[68] We can use Erdkamp's 60 *modii*: 1 iugerum ratio to calculate the land's productivity potential. For

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[66] Boatwright 2000, 112-20 for more on the engineering projects Hadrian initiated outside the city of Rome.
[67] See O'Dwyer 2018 for more details on the nineteenth century drainage of the Fucine Lake and its connection to the ancient drainage channel.
[68] Erdkamp 2005, 34-38 surveys the few literary references to crop yield in the ancient literary sources.

the 140 square kilometers or 56,000 iugera of land covered by the Fucine Lake gives a yield of 3,360,000 *modii*. Even if the lake was only half drained by Claudius, the land had the potential to produce enough grain to provide the 60 *modii* a year allotment to around 30,000 people.[69] For a time up until the channel became blocked due to lack of maintenance, a significant amount of arable land was uncovered. Tacitus may have criticized the execution, and Dio the cost of the project, but at the time even a partial draining of the lake could have an impact on the grain supply of Rome and environs.

2.4.2 Shipping: Portus and River Infrastructure

On two occasions in the extant *Annals*, Tactus comments on the unstable nature of Rome's reliance on importing grain from elsewhere in the empire (*Ann*. 3.54; 12.43). The first comment is found in a paraphrased letter written by Tiberius to the Senate regarding proposed sumptuary legislation, which, as Tacitus writes, many Senators did not support, fearing that their lavish lifestyles might become limited (*Ann*. 3.54). Later in the *Annals*, Tacitus himself echoes this same sentiment when writes about the food shortage in 51 under Claudius (*Ann*. 12.43). He first sets the stage, describing the various negative omens that descended upon the Roman people during that year,

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[69] The calculations above are my own. These calculations represent maximums, assuming that all of the land cleared from draining would be used to grow grain for the state. Regardless, the quantification does illuminate what Claudius likely saw as a massive benefit gained from draining the lake. The amount of fertile farmland near the city could supplement the cargoes arriving from Alexandria and Sicily. It would have been cheaper and more convenient to grow grain closer to the city.

including ominous bird sightings on the Capitoline, house-toppling earthquakes, and famine.[70] Only the grace of the gods, according to Tacitus, alleviated the shortage by bestowing a mild winter upon the people. Closing out his thoughts on the struggles of the year, Tacitus remarks that the Romans once exported grain to their military encampments on the frontiers, "but now we rather cultivate Africa and Egypt, and the livelihood of the Roman people has been surrendered to boats and accidents" (*Ann*. 12.43: *sed Africam potius et Aegyptum exercemus, navibusque et casibus vita populi Romani permissa est*). Tacitus was not implying that Rome should stop importing grain from across the Mediterranean. As would become even more obvious in the storm that wrecked 200 ships at Ostia in 62 (Tac. *Ann*. 15.8.3), the food supply of Rome was very much at the mercy of the weather and water transport.

Water transport was crucial because the cost of transporting goods, especially a crop as heavy and temperamental as grain, was much cheaper by boat than by cart over land.[71] A. H. M. Jones once calculated that it would be "cheaper to ship grain from one end of the Mediterranean to the other than to cart it 75 miles over land."[72] Shipping grain by sea was a far more cost effective option than by land, but Rome was at a disadvantage because there was not a natural port at the mouth of the Tiber river.

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[70] See Keitel 2010 for more on Tacitus and the disaster narrative.
[71] E.g., Rickman 1980, 262.
[72] Jones 1964, 845.

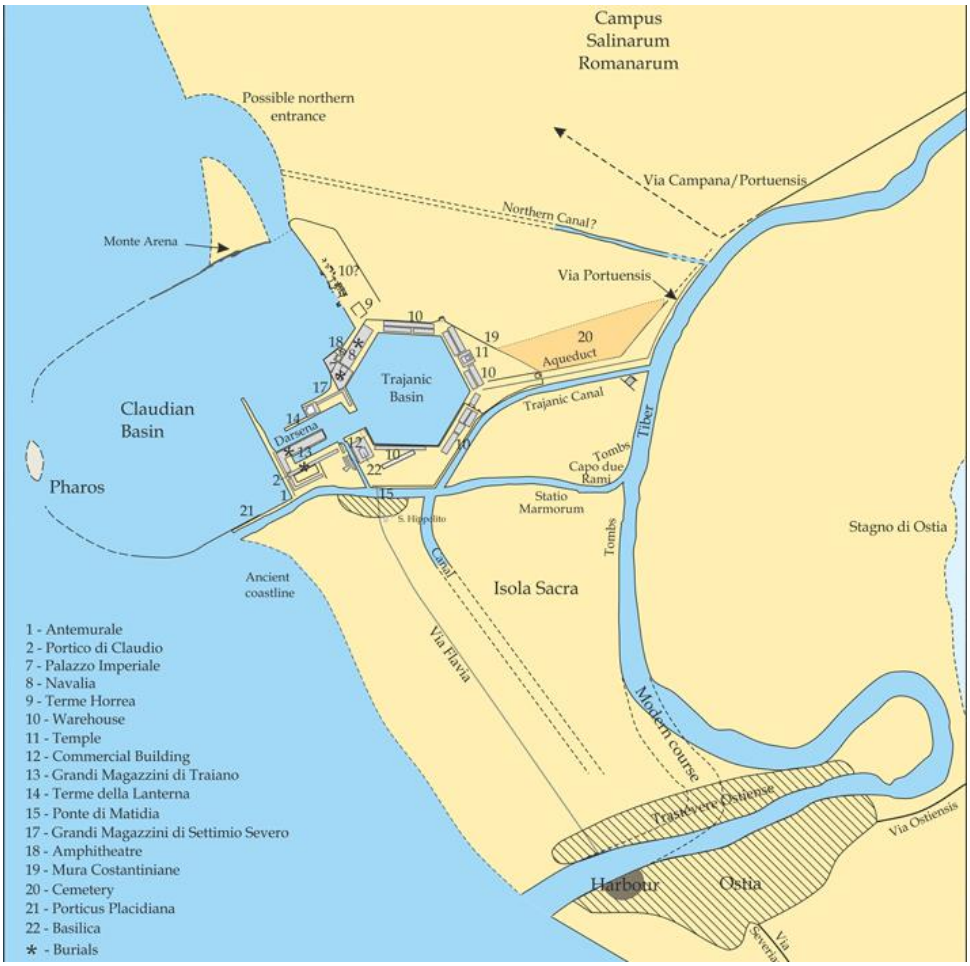

Figure 6: Portus and its surroundings during Trajan's reign (Keay and Paroli 2011, Fig. 1.3).

Another major undertaking of Claudius' reign was the construction of a stable port at Ostia at the mouth of the Tiber river. Before Portus, the procedure for shipping grain into the city involved several treacherous steps, with risks to the safety of the crop present at each. Larger boats would sit in the open sea while their cargoes were offloaded onto smaller boats. These smaller boats would make their way to shore and

the goods would then be put on barges designed to be towed up the Tiber river. Puteoli (modern Pozzuoli), a city on the Bay of Naples, continued to be used as a major port even after the construction of Portus (Sen. *Ep*. 77; see the map of central Italy, Fig. 1).[73] Figure 7 shows the plan of Portus following Trajan's restoration, but with Claudius' original design marked. The Claudian port enclosed 200 hectares of the sea and featured a large lighthouse (*pharos*) and two artificial moles extending from the shoreline toward the lighthouse.[74] Both Pliny the Elder and Suetonius indicate that the base of the lighthouse was created by sinking the boat Caligula used to transport an obelisk from Egypt to Rome (Pliny *HN* 36.14; Suet. *Claud.* 20.3). That obelisk was once used to decorate Caligula's circus on the Vatican plain.[75] (Using that boat is just one example of Claudius destroying something of Caligula's for the sake of an infrastructure project. In Chapter 3, I show that Claudius permanently halted work on Caligula's amphitheater in the Campus Martius to repair the arches of the Aqua Virgo. Claudian building after Caligula may have served as a model for the Flavian emperors to return much of the land covered by the Domus Aurea over to the public).

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[73] For more on Puteoli's role in the commerce of Rome, see D'Arms 1981, 121-74 and Frederiksen 1984, 319-58.

[74] Excavations of the area during the construction of Fiumicino Airport in the 1950s and 1960s uncovered parts of the Claudian moles. For a useful summary of recent archaeological work on the early phases of Portus, see Keay and Paroli 2011, 2-7.

[75] See Richardson 1992, 84-84 and LTUR 1.267-69, s.v. "Circus Gaii et Neronis," for more on the Circus of Gaius and Nero, also known as the Circus Vaticanus.

The harbor at Ostia may not have been dedicated before Claudius' death, but some elements were complete before 54. The evidence that has been used to argue for a later dedication is a sestertius of Nero dating to 64 (Fig. 6). The reverse of this brass coin is remarkable for its detailed depiction of the port with two stylized moles surrounding seven ships. At the top, where the lighthouse would be expected, is a statue, perhaps a representation of the emperor. The reverse legend reads as "the port of Augustan Ostia, by a decree of the senate" (*augusti | s(enatus) port(us) ost(iensis) c(onsulto)*).[76] Although this coin may celebrate an official dedication of Portus, the port was already in use by 62, the year in which 200 ships were destroyed in the harbor by a storm (Tac. *Ann.* 15.8.3).

Figure 7: *Sestertius* of Nero depicting Portus, dating to 64 (RIC 1² 82).

[76] Obverse: Nero Claud(ius) Caesar Aug(ustus) Germ(anicus) p(ontifex) m(aximus) tr(ibunicia) p(otestate) imp(erator) p(ater) p(atriae).

The surviving evidence does not preclude the possibility that the harbor at Portus was functional before Claudius' death. The fact that he organized Ostia into regions analogous to those set up in Rome, and established a *procurator annonae Ostis* and *procurator portus*, also imply a more functional harbor at Portus. Even earlier than the evidence from Tacitus is a Claudian inscription, once probably on the attic of a monumental arch, showing that a major part of the port was complete by 46:

> Ti(berius) Claudius Drusi f(ilius) Caesar | Aug(ustus) Germanicus pontif(ex) max(imus) | trib(unicia) potest(ate) VI co(n)s(ul) design(atus) IIII imp(erator) XII p(ater) p(atriae) | fossis ductis a tiberi operis portu[s] | caussa emissisque in mare urbem | inundationis periculo liberavit
>
> Tiberius Claudius Caesar Augustus, son of Drusus, Germanicus, Pontifex Maximus, holding tribunician power for the 6th time, consul elect for the 4th time, Imperator 12 times, father of the country, after leading canals from the Tiber for the sake of the works at Portus, and sending them forth to the sea, he freed the city from the danger of flooding. (*CIL* 14.85 = Thylander B310)

Within five years of starting work on Portus, Claudius had canals completed to facilitate movement of goods from the port up the Tiber, and to alleviate flooding in the city.[77] From a hydrological standpoint, the canals did nothing to prevent flooding in the city.[78] The Claudian inscription, as I argue in Chapter 4, also exhibits an emphasis on protecting and organizing the city.[79]

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[77] Claudius' father, Drusus had built canals at mouth of Rhine river (Suet. *Claud*. 1.2).
[78] Aldrete 2007, 184.
[79] See Chapter 4 for more on the boundary marking work done along the banks of the Tiber River in Rome.

On top of initializing construction on a safe harbor and thus setting in motion further urban development in Rome, Claudius also used every possible means to encourage private shippers to bring grain to Rome, even in the winter season (Suet. *Claud.* 18.2). Shipping was seasonal and at the mercy of nature. Even with the construction of a new port, the movement of grain from Egypt or North Africa remained a multi-step process. Larger ships carrying grain would reach the port near Rome, but the cargo then needed to be loaded onto smaller barges, called *naves codicariae*, to make the 15-mile journey from the mouth of the Tiber into the city. Since Rome never had a designated merchant fleet, the transportation of grain relied heavily on private merchants.[80] The shipping season was at the mercy of three major factors: the navigability of the Tiber river, storms on the Mediterranean sea, and harvest timing.[81] From December to March, the Tiber reached its highest levels and rendered the current too strong for towing goods upstream. Winter was also the season believed to be the most difficult for shipping on the Mediterranean. The harvest season began in April and extended through November, so there was a constant stream of goods arriving at Rome in those months. Suetonius lists the measures put in place by Claudius to encourage off-season shipping. He guaranteed that the state would insure merchant vessels

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[80] Aldrete and Mattingly 1999, 184; Robinson 1992, 147.
[81] Malmberg 2015, 189-90.

attempting these treacherous journeys in case of storms (Suet. *Claud.* 18.2). This seems unique: there is no evidence for another emperor offering to protect merchants from monetary loss in shipping after Claudius.[82]

Claudius also encouraged ship building by offering incentives. Suetonius defines these benefits in detail, noting that they were still in effect to his day:

> *et naves mercaturae causa fabricantibus magna commode constituit pro condicione cuiusque: civi vacationem legis Papiae Poppaeae, Latino ius Quiritum, feminis ius IIII liberorum, quae constituta hodieque servantur.*
>
> And he offered to those who would build merchant vessels great advantages in accordance with the legal status of each: for a citizen, exemption from the Lex Papia Poppaea, to a Latin, the rights of Roman citizenship, to women, the rights of four children, which once established remains in force even today. (Suet. *Claud.* 19)

The benefits offered were substantial. The *Lex Papia Poppaea* of 9 expanded upon and clarified the *Lex Iulia maritandis ordinibus* of 18 BCE. Both laws are considered part of Augustus' marriage legislation intended to encourage people, especially higher-status members of society, to produce more children. Exemptions from these laws were traditionally granted by the senate during the Republic, but in the principate they were granted by the emperor (Dio 55.2.5-7). The *Latini* refers to informally freed slaves who possessed only partial citizenship, similar to the Latin rights held by Italian people

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[82] Hurley 2001, 141-42 references a passage in Livy about the Punic War in which merchants demanded the state take on the risk of transporting goods to Spain (Livy 23.49.1-3).

possessed before the Social Wars in 89 BCE.[83] If their ships were large enough and could remain in use for six years, then the *Latini* were given full citizenship, *ius Quiritum* (Gai. *Inst*. 1.32[c]). Women, who must have had a significant stake in merchant activities to warrant a separate provision in Claudius' benefits, were given the rights of mothers of four children.[84] This would give the woman control over her own property. These provisions, which were designed to entice people from all echelons of society to participate, must have had some degree of success to be still honored when Suetonius was writing in the early second century.

Ultimately, building a port at the mouth of the Tiber influenced the development of additional port infrastructure elsewhere along the riverbanks in Rome.[85] The need to bring more grain into the city was a key factor driving this development. The import of grain from Sardinia and Sicily in the late third century BCE had led to the construction of the emporium district; the grain laws in the mid-1st century BCE necessitated additional infrastructure to handle more importation; import of grain from Sardinia and Sicily necessitated the creation of port structures to facilitate import; and after Clodius' grain law went into effect in 58 BCE, in 55/54 BCE the censors worked to demarcate the

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[83] Hurley 2001, 142.
[84] See Treggiari 1996, 886-90 for a summary of the complexities of the Augustan social legislation and marriage.
[85] Malmberg 2015 argues that there was a direct correlation between the increased use of the Tiber River as a mode of transport, and Rome's urban development.

land around the banks of the Tiber to keep the towpaths and loading facilities clear.[86] As I address in Chapter 4, Claudius also worked to shore up the riverbank boundaries (*CIL* 6.31545 = *ILS* 5926).[87]

Simon Malmberg gives most of the credit to Trajan for bolstering port infrastructure in the city, but due to persistent floods, constant inhabitation along the banks of the Tiber, and the construction of embankments in the 19th century, the extant remains are sparse. On the other hand, we know that Claudius' port reached some degree of completion during his reign, shippers were protected by the imperial government for attempting journeys during the off-season, and shipbuilders were rewarded with legal provisions. The buildup of port infrastructure along the Tiber River must have at least begun under Claudius. Evidence for the protection of the riverbanks under Claudius is discussed in detail in Chapter 4.

2.4.3 Distribution: The Porticus Minucia Frumentaria and Warehouses

After examining what Claudius did to improve the transport of grain to Rome, we can consider what was done to help facilitate the distribution of that grain to the people. A structure, called the Porticus Minucia Frumentaria in the *Regionaries*, seems to

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[86] Malmberg 2015, 200 summarizes the evidence.
[87] See Chapter 4 below.

have been built in the mid-first century; it marked a major change in the way free grain allotments were distributed. None of the literary sources specifically attribute this building to Claudius, but none credits another emperor with its construction. While epigraphic evidence can only offer a *terminus post quem* date of 41 for the portico, I argue that the sheer amount of contemporaneous effort to improve the grain situation in Rome makes a Claudian date attractive. At some point in the first century, the free grain distributions transitioned from senate to imperial control. Some argue that this happened under Claudius, while others argue that it happened later.[88] Those who believe that this shift from senate to imperial control happened later also argue that the Claudian period brought no substantial administrative changes to grain distribution. I believe that determining the entity which held symbolic control over the grain distributions is not as important as what was done to improve grain dispersals during Claudius' reign.[89] He could still have initiated building of warehouses and the Porticus Minucia Frumentaria even if the grain dole were technically controlled by the senate at the time.

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[88] Rickman 1980, 213-17 argues against Momigliano's view that Claudius' reign marked a transition of the grain distributions from senatorial to imperial control (Momigliano 1934, 50).
[89] Rickman 1980, 268 reframes the question. Senate and imperial powers in the early principate were not so clearly delineated for us to debate who had ultimate control of a certain enterprise. Instead, we should consider the relationship between the state and individual enterprises in the grain supply and distribution network.

Much ink has been spilled on the location of the Porticus Minucia Frumentaria, and there is very little consensus.[90] I spatially analyze three proposed locations below, based on their proximity to the Tiber, location in the flood plain, ease of access from other areas of the city, and their connection to other building projects of Claudius. I also examine some utilitarian storage spaces constructed during Claudius' reign. Claudius' building initiatives related to grain storage and distribution show that the emperor truly tried to prevent grain shortages from farm to table.

The logistics of grain distributions during the Republic and early Principate are not known definitively due to the paucity of the evidence.[91] There was likely not a purpose-built structure for the distributions prior to the construction of the Porticus Minucia Frumentaria.[92] Grain may have been distributed in *horrea* (warehouses) and/or other public buildings throughout the city. Rickman postulates that the location and time could vary each month, but argues that all of the *plebs frumentaria* would receive

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[90] For example, Zevi 1993, 666-67n13 compiles bibliography for seven other hypotheses for the Porticus Minucia Frumentaria's location.
[91] Virlouvet 1995, 27-59 surveys the evidence for the topography of grain distribution in the Republican period.
[92] Rickman 1980, 185 cites the Table of Heraclea, *Lex Iulia Municipalis* of 45 BCE as confirmation of the lack of a dedicated space for distributions. The law was to be posted in the forum and in the place where grain would be given to the people. No structure is cited for where grain would be given to the people.

their grain on the same day in the Republic.[93] This organization would change, as we see below.

Epigraphic evidence from the mid-first century CE shows that the free allotments of grain were not distributed on a single day to the 200,000 – 250,000 people who qualified. Instead, the *plebs frumentaria* were divided up, with groups assigned to specific days over the span of a month. Different groups received their allotments on separate days. An inscription that articulates this new group distribution method, and which may date the Porticus Minucia Frumentaria to Claudius' reign, comes from a dedication made by a freedman of Claudius:

Ti(berius) Claudius Aug(usti) lib(ertus)
Ianuarius curator
de Minucia die XIII
ostio XLII et
Avonia Tyche uxor eius
Pituaniani solaria de sua
impe(n)sa fecerunt

> Tiberius Claudius, freedman of Augustus [Claudius], Ianuarius, curator, from the Porticus Minucia on day 13, in bay 42, and Avonia Tyche, his wife, from the college of the Pituaniani, built terraces at their own expense. (*CIL* 6.10223 = *ILS* 6069)[94]

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[93] Rickman 1980, 185.

[94] The translation of Pituaniani presents some difficulty because it could either be a nominative plural, describing a group or college of which the couple were members, or it could be genitive singular, indicating whose "*solaria*" the couple built. Virlouvet 1995, 237n226 favors the former interpretation, while

This inscription was found in Rome, but its original location is unknown. As a freedman of Claudius, indicated by his *praenomen* and *nomen*, Tiberius Claudius Ianuarius probably put up this inscription during the Claudian period or slightly afterwards. The *terminus post quem* date of 41 is at least known with certainty.[95]

The first point to address is the attribution of the Porticus Minucia Frumentaria to Claudius. Arnaldo Momigliano, Fausto Zevi, and others support a Claudian date based on the inscription presented above and the archaeological evidence. Daniele Manacorda in the *Lexicon Topographicum Urbis Romae*, however, argues that the attribution of the portico to Claudius' reign has historical and epigraphic merit, but that no archaeological or topographical evidence supports it.[96] This statement is problematic because it privileges extant archaeological remains over historical and epigraphic testimony. Coarelli argues for a Domitianic date for the Porticus Minucia Frumentaria using the testimony of the Chronographer of 354 regarding Domitian's rebuilding efforts

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Wellebrouck 2016, 97 favors the latter. I follow Virlouvet's interpretation in my translation, but the choice does not affect my argument.

[95] See Weaver 1963, 272 on dating inscriptions of imperial freedmen. The nomenclature of a manumitting emperor generally persists around 40 years after that emperor's death. The latest dated inscription with the name Tiberius Claudius Augusti libertus dates to 108.

[96] Momigliano 1934, 50; *LTUR* 4.135, s.v. "Porticus Minucia Frumentaria," (D. Manacorda). Manacorda and Zanini 1997 have shown that the archaeological remains at Via delle Botteghe Oscure have a Republican, Julio-Claudian, and Domitianic phase. With its early phases, this structure seems better identified as the Porticus Minucia Vetus.

after the extensive fire of 80. This fire affected the Capitoline and Palatine hills and spread through much of the Campus Martius. The Chronographer of 354 lists the structures Domitian rebuilt from the ground up, which included the Porticus Minucia Vetus, but not the Frumentaria (Chron. 354 144). Coarelli's argument is that the Chronographer of 354 listed only structures rebuilt by Domitian, not new buildings.[97] However, that argument hinges on the Porticus Minucia Vetus and Frumentaria being adjacent to one another, and thus subject to analogous devastation from the fire. The Tiberius Claudius Ianuarius inscription may have been erected after Claudius died, but for the phrase *de Minucia* to have meaning for someone reading the inscription, the Porticus Minucia Frumentaria would have had to be well established as the center for the *frumentationes.* Since it is a dedication and not a funerary inscription, Ianuarius was still alive when it was erected.

Second, there are a couple of different interpretations for the phrase *de Minucia* in the inscription. The *de Minucia* either can be taken as part of the title of his curatorship or the line break separates the two: *curator*, *de Minucia*. Was he a curator in charge of grain distributions from that stall in the Porticus Minucia Frumentaria, or was he touting his status as a recipient of the *frumentum publicum*? The latter is more likely. Ianuarius

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[97] Manacorda and Zanini 1989, 28.

referenced two separate achievements: his curatorship, and the fact that he qualified to receive a grain allotment on the 13th day of the month from stall 42 of the Porticus Minucia Frumentaria. No other surviving inscriptions include the phrase *curator de Minucia*, but as we see below others do celebrate the individual's membership in the *plebs frumentaria.*

Qualifying for monthly grain distributions, namely being a member of the *plebs frumentaria*, was used in other inscriptions as a marker of status. Two funerary inscriptions from Rome of male children mention the fact that they were entitled to an allotment of grain.[98] One is from the mid-first to early-second century, for a Gaius Sergius Alcimus who, though dead at the age of three, had received grain on the 10th day from stall 39 (*CIL* 6.10224 = *ILS* 6069: *C(aius) Sergius C(ai) fil(ius) Alcimus* | *vixit ann(is) III mensib(us) III* | *diebus tribus frumentum accepit* | *die X ostio XXXIX* | *Sergius Alcimus f(ecit) suo*).[99] Another, from the mid-second to early-third century CE for a Gaius Vibius Celer, who died at the age of four, shows he received grain on 7th day from stall 15 (*CIL* 6.10225 = *ILS* 6070: *D(is) M(anibus)* | *C(aius) Vibius C(ai) f(ilius) Celer* | *vix(it) ann(is) IIII*

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[98] Both inscriptions were found in Rome, but their exact provenience is unknown. One is now in the British Museum (*CIL* 6.10224 = *ILS* 6069), and the other is in the Naples Archaeological Museum (*CIL* 6.10225 = *ILS* 6070).

[99] This inscription is one of two carved on the monument. The first inscription, carved inside of a marked tabula at the top, records the death of another child who lived to be one year, seven months, and one day old (L(ucius) Cocceius M(arci) f (ilius) Dexius Clymenus, vixit annum I, menses VII, diem unum).

mens(i)b(us) XI | frum(entum) ac(cepit) d(ie) VII ostio XV | Vivius Celer f(ilio) suo).[100] A couple of differences stand out between Ianuarius' inscription and the other two, which were funerary and not dedicatory. The formula is identical on the two funerary inscriptions, including *frumentum accepit*, but Ianuarius' inscription does not explicitly mention receiving *frumentum*. Instead it includes *de Minucia*. It is also worth considering that the other inscriptions are both for children who died young and were technically not old enough to receive grain allotments.[101] Perhaps qualifying for monthly grain distributions was the greatest achievement that could be recorded on the epitaphs of these children who died before adulthood, while Ianuarius included this information after celebrating his time as a curator. The evidence may be sparse, but these logistical changes to the distribution of the grain allotments fit best in the context of the other initiatives related to grain distribution that were undertaken during Claudius' reign.[102]

Young children, like those in the two epitaphs presented above, may have had access to grain distributions, despite not technically being of age to qualify, because

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[100] Above this inscription is a sculptural frieze of a dog and a boy, which may represent the deceased child. Virlouvet 2009, 218-21 considers this inscription and other inscriptions of children noting a right to a monthly distribution of grain.
[101] Virlouvet 1995, 208-209 indicates that some people may have been able to buy a *tessera frumentaria* for access to the free grain distributions.
[102] Sall. *Hist*. 3.48 indicates that the age of qualification for free grain distributions was fourteen.

tessera frumentaria could be bought and sold.[103] Catherine Virlouvet investigated all of the evidence for the *tessera frumentaria* and concluded that these were a type of identification card that individuals would bring each month to their assigned stall to retrieve their five *modii* of grain, not, as previously argued, a set of tokens.[104] The information contained in the epigraphic record not only elucidates the power for one's self-presentation of qualifying for grain distributions, but also sheds light on the longevity of the logistical arrangements established in the mid-first century. The way that the dedicators of each inscription mention a day and stall proves that distribution continued to be spread out over the course of the month. Presumably, the Porticus Minucia Frumentaria was buzzing with activity most days of the month,[105] making the location all the more significant.

Where exactly the Porticus Minucia Frumentaria was continues to vex Roman topographers. From the Regionary Catalogues we know that the structure was in Region IX, the Circus Flaminius region, which encompassed the area in the Campus Martius west of the Via Flaminia/Via Lata to the banks of the Tiber river. Both the Curiosum and Notitia catalogues mention a Porticus Minucia Vetus and a Porticus

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[103] For example, Digest 32.35 (Scaevola) notes that a *tessera frumentaria* could be bought in much the same way that one could buy membership into a particular tribe. Nicolet 1980, 412n49 indicates that it is unclear whether the tesserae were sold by private individuals or the imperial government.
[104] Virlouvet 1995, 309-68.
[105] Distributions would not have happened every single day of each month (Virlouvet 1995, 16).

Minucia Frumentaria. Apuleius, writing in the mid-2nd century, mentions going to a Porticus Minucia to get grain in his *De Mundo* (35: *alius ad Minuciam frumentatum venit*). Despite the importance and longevity of this structure, it has never been convincingly located.

Bringing a spatial analysis to the different theories may elucidate the problem. Claudius built or restored several other structures in this city region and its adjacencies—a monumental arch for his victory in Britain (Chapter 3), the Aqua Virgo (Chapter 3), the Theater of Pompey (Suet. *Claud*. 21.1; Dio 60.6.8), and an arch dedicated to Tiberius (Suet. *Claud*. 11.3). Further, he extended the sacred boundary of Rome, the *pomerium*, to cover more of the Campus Martius and shored up the riverbank of the Tiber (Chapter 4). I argue that Claudius focused his attention on an area where daily foot traffic of those picking up their grain was assured.

Since I am more interested in how the structure fit into Claudius' efforts to improve infrastructure, I will not address every single location ever proposed for the Porticus Minucia Frumentaria's location, because most have been shown to be untenable. The three I analyze closely are the arguments made by Filippo Coarelli,

Lawrence Richardson, and Fausto Zevi.[106] We must keep in mind that all three scholars associate the Porticus Minucia Frumentaria with extant archaeological remains, but most of the Campus Martius has not been excavated due to nearly constant occupation since antiquity and a dramatic rise of the ground level from ancient times (between 3 and 10 meters in spots).[107] The Porticus Minucia Frumentaria could very well have been in a spot that has not been excavated.

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[106] Coarelli 1968, Richardson 1992, and Zevi 1993. Zevi 1993, 666-67n13 compiles bibliography for the seven other hypotheses for the Porticus Minucia Frumentaria's location. Coarelli and Zevi's proposals for the Porticus Minucia Frumentaria are the two addressed in detail in *LTUR* 4.132-37, s.v. "Porticus Minucia Frumentaria," (D. Manacorda).

[107] Corazza and Marra 1995, tav. 13 provides a detailed map of the amount of natural and man-made fill that has accumulated in Rome since the ancient period.

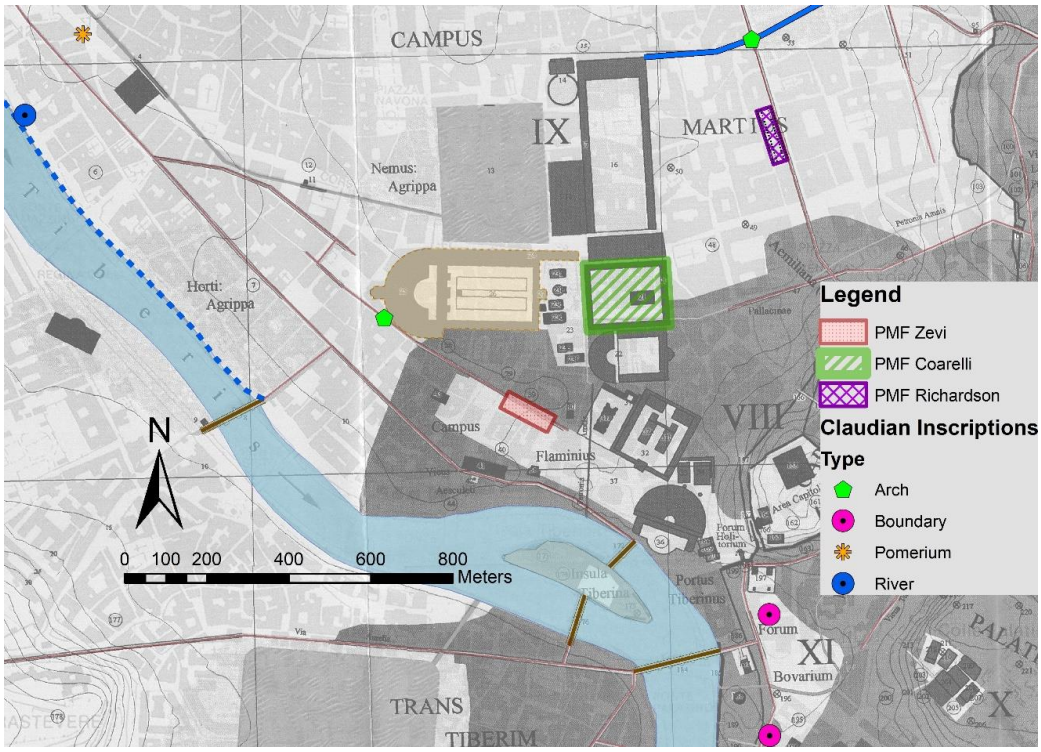

Figure 8: Map of Coarelli, Richardson, and Zevi's theories for the Porticus Minucia Frumentaria's location in the context of other Claudian building initiatives.

Figure 8 designates the location and size of the structures identified as the Porticus Minucia Frumentaria by Coarelli (green lines), Richardson (purple crosshatch), and Zevi (red dots). Coarelli's proposal is the most widely accepted.[108] He argues that the original Porticus Minucia, built around 100 BCE by M. Minucius Rufus, surrounded the four Republican temples built along the triumphal route in an area now called Largo Argentina. With what would later be called the Porticus Minucia Vetus, the Old

[108] For example, Dyson 2010, 245 states Coarelli's theory as fact. See *LTUR* 4.132-37, s.v. "Porticus Minucia Frumentaria," (D. Manacorda) for a summary of the various theories on the location of the portico. Manacorda is most convinced by Coarelli's argument.

Porticus Minucia, also located in that area, Coarelli argues that the larger portico just east of the Largo Argentina was an extension of the original portico. Thus, this extension became known as the Porticus Minucia Frumentaria. This portico and the temple located within it are attested in the archaeological record (Fig. 9) and on fragments of the Severan Marble Plan. The surviving pieces of the Severan Marble Plan contain the letters MINI, which Coarelli and others have read as MINU[cia] (Fig. 10).[109] The archaeological evidence for Coarelli's Porticus Minucia Frumentaria preserves a cryptoporticus, but no rooms of utilitarian character; instead, what has been excavated looks like a fairly typical temenos with a temple. Yet the temple is not even symmetrically arranged.

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[109] Coarelli 1968, 377. The way that the Porticus Minucia Vetus and Frumentarium are linked in their entries in the Regionary catalogue, "Minuciam Veterem et Frumentariam" (Curiosum) and "Minucias duas veterem et frumentarium" (Notitia), does not prove that the two structures were topographically linked. There is no topographical organization to the lists. Reynolds 1996, 213-24 argues that the Regionaries were the written equivalent of the Severan Marble Plan, giving a sense of Rome's greatness.

Figure 9: Remains of a temple in the temenos of the *Porticus Minucia* on Via delle Botteghe Oscure (photo by author).

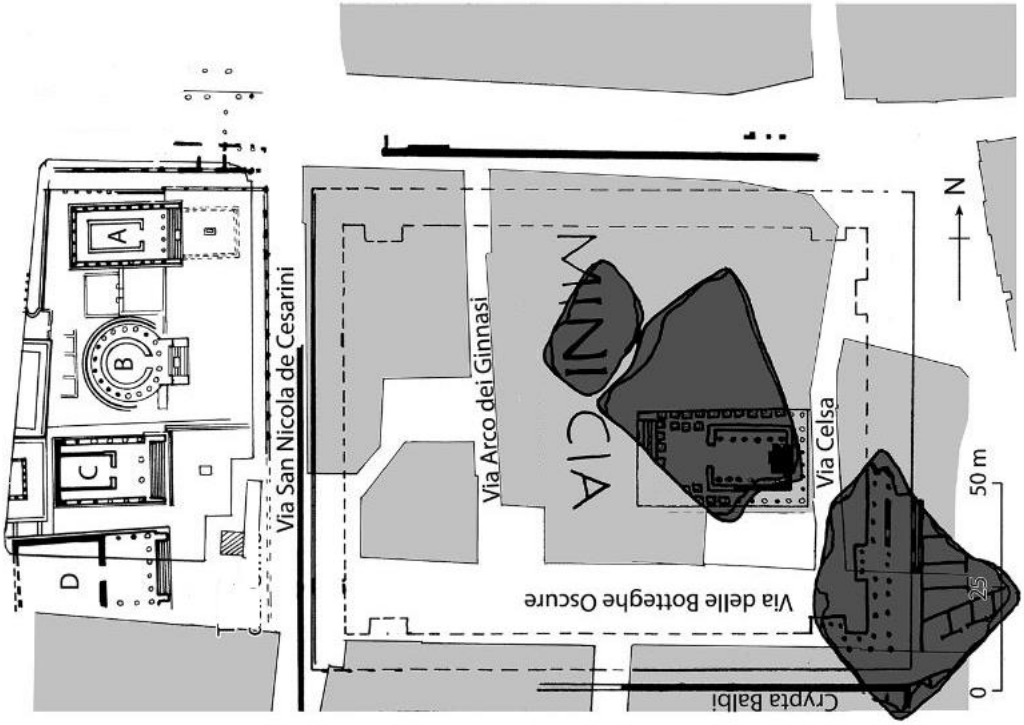

Figure 10: The four temples of the Largo Argentina and the Severan Marble Plan fragments of a *Porticus Minucia* (Claridge 1998, 216, Fig. 100).

Richardson and Zevi agree with the interpretation that MINI[cia] is MINU[cia], but instead identify the Severan Marble Plan Minucia structure as the Porticus Minucia Vetus and the temple within it as the Temple of the Lares Permarini.[110] Proponents of this argument prefer to assign the Porticus Minucia Frumentaria to a utilitarian structure

[110] Richardson 1992, 316; Zevi 1993. Cozza 1968 was the first to identify the large portico north of the Crypta Balbi and South of the Diribitorium as the Porticus Minucia Vetus. Zevi 2000 made the connection with the Temple of Lares Permarini, which Coarelli places in the Largo Argentina.

with features of a warehouse (*horreum*) in a location that would clearly separate the Vetus and Frumentaria.[111]

For example, Richardson argues that the utilitarian structure flanking the Via Flaminia, once thought to be Rome's voting enclosure called the Saepta Julia, was the *Porticus Minucia Frumentaria*.[112] Rodolfo Lanciani's map of the area (Fig. 11) conjectures a structure of enormous size, approximately 400 x 60 m, based on the erroneous placement of some fragments of the Severan Marble Plan. In 1934 G. Gatti showed that the fragments were actually part of a warehouse in the emporium district at the base of the Aventine hill called the Porticus Aemilia.[113] The Saepta Julia has since been associated with archaeological remains just east of the Pantheon, and the structure on the Via Lata has been reconstructed to be a more modest three-aisled structure, 27 x 100 m in size.[114] Richardson refers to rusticated piers, known both from a 18th century print by Giovanni Battista Piranesi and from in situ remains.[115] Since Piranesi tended to

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[111] Rickman 1983, 105; Zevi 2000, 453.
[112] Richardson 1992, 315-16.
[113] Boatwright 2012, 1n2.
[114] See *LTUR* 4.228-29, s.v. "Saepta Iulia," (E. Gatti) and Richardson 1992, 340-41 for more on the Saepta Julia. Krautheimer 1971, 72 reconstructs a 1st century CE portico stretching along the Via del Corso from the Via Lata to Vicolo Doria.
[115] Sjöqvist 1946, 81-83 reports seeing rusticated travertine piers dating to the Claudian period and damaged by fire, probably the great fire under Domitian in 80.

exaggerate rustication in his prints, we have to be careful when using Piranesi's depiction of rusticated architecture as undisputed evidence for a Claudian date.[116]

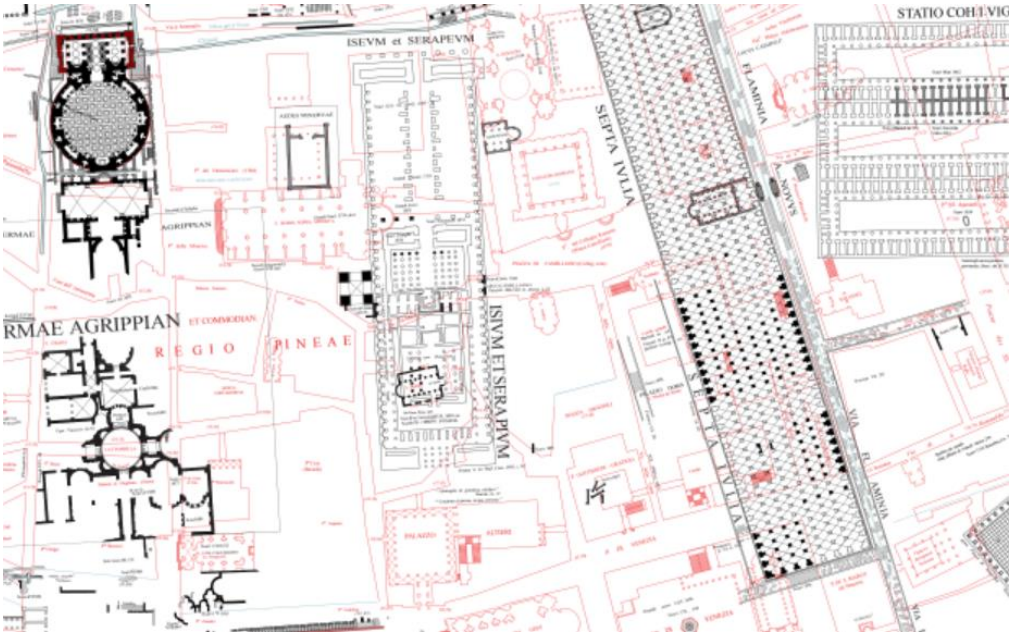

Figure 11: Lanciani's map (1901) of the central Campus Martius showing the archaeological remains of a building that he identified at the time as the Saepta Julia.

Finally, Zevi argues that the remnants of a building near the Circus Flaminius on Via Santa Maria dei Calderari are part of the Porticus Minucia Frumentaria.[117] The visible evidence include two travertine columns and a brick arch (Fig. 12). The individual drums of the travertine columns are relatively smooth now but may have been rusticated originally. A seventeenth-century print by Alò Giovannoli (Fig. 13)

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[116] Boatwright 2012, 16ff.
[117] Zevi 1993, 690-92.

suggests more rustication in the columns and surrounding masonry. Nonetheless, the same disclaimer for Piranesi's prints applies in this case as well. Zevi proposes a Claudian date for the structure and argues that the name *Minucia Frumentaria* was given to the building to honor Marcus Minucius Rufus, who built the Porticus Minucia Vetus, served as tribune of the plebs in 121 BCE, and was associated with the grain laws of C. Gracchus.[118] The size of this and the other two proposed buildings would have been adequate for the distributions.

Figure 12: Two (rusticated?) travertine piers from an unidentified building on Via S. Maria dei Calderari (photo by author).

[118] Zevi 1994, 1073-74.

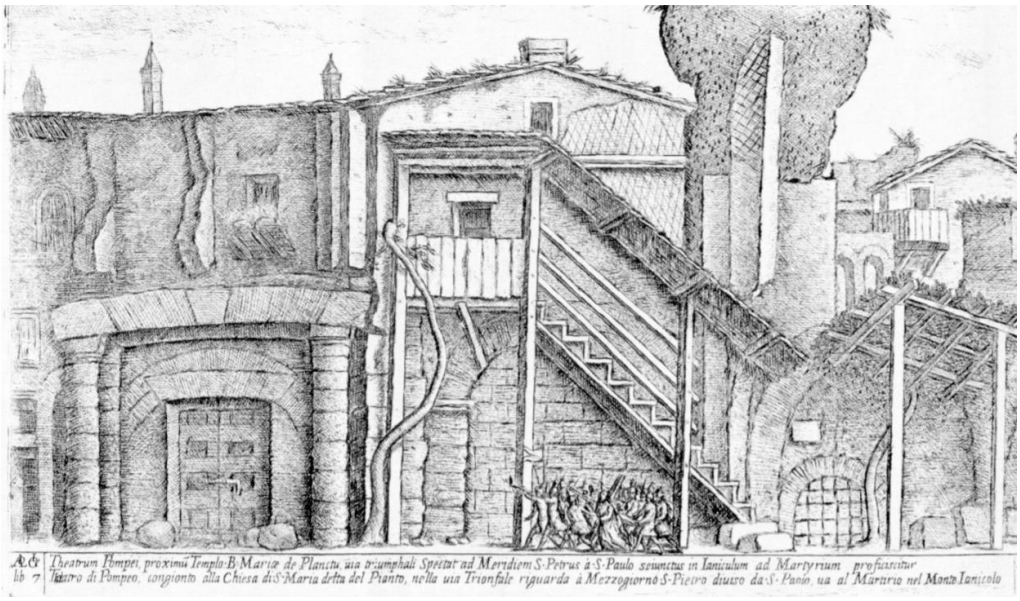

Figure 13: Seventeenth century etching of the structure on Via S. Maria dei Calderari by Alò Giovannoli. [119]

Assuming that Claudius did initiate the construction of the Porticus Minucia Frumentaria, we can consider the proposed locations in terms of practical and symbolic criteria within his reign. What might have been considered appropriate when choosing a spot for a permanent structure for distributing the *frumentationes*? Proximity to the Tiber River, the docks, and the large warehouses of the Emporium district would have simplified the process of moving grain to the *Porticus Minucia Frumentaria*. Since the Campus Martius was squarely in a flood plain of the Tiber river, are any of the structures less flood-prone than the others? If those collecting their free grain ration had

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[119] Zevi 1993, 690 Fig. 8 shows a print of this area from the 17th century. The travertine piers then look especially rusticated.

to travel to a centralized location for their allotment, would the structure be easily accessible? Were there any other Claudian structures or building initiatives nearby to give the sense of a "unified building program"? I am not implying that that the urban planners and engineers of the Claudian period assessed the suitability of a building site in this way, but such questions can guide an analysis of the three potential locales. This examination considers the larger spatial and historical context.

For distribution, grain would have to be moved directly from the docks or from storage warehouses elsewhere in the city to the *Porticus Minucia Frumentaria*. Richardson's structure flanking the Via Flaminia/Via Lata is the furthest of the three from the Tiber River. If grain happened to arrive at Tor di Nona, a harbor in the northern Campus Martius, directly across the Tiber from the Castle Sant'Angelo, the shipment could have been moved along two major thoroughfares – the Via Recta and Via Flaminia. Even on such a direct route and assuming that grain even arrived at this particular port[120] and immediately transported to the *Porticus Minucia Frumentaria*, the building was still over a kilometer away. Zevi's structure in the Circus Flaminius is the closest to the river and the Emporium district. As we saw above, grain was cheaper to transport by water than by land, but the Tiber River was not navigable during the

[120] Malmberg 2015, 195-96 notes differences in Tor di Nona's design compared to the port structures near the Emporium district and Monte Testaccio. Smaller boats from points upstream were more likely to dock at this harbor.

winter months. Coarelli's proposed portico lies between the two in an area heavily populated by other monumental buildings. Very little is known about the small-scale network of roads in the city, but in such a space crowded with known buildings and monumental structures, access to Coarelli's structure seems more difficult than the others.[121] Given the practical locations of other Claudian projects, such as embedding the triumphal arch celebrating his British Victory in the course of his repair of to the Aqua Virgo, Zevi's structure in the Circus Flaminius makes the most sense based on access.

Flooding was a common concern in the city of Rome and Claudius attempted to reduce flooding by digging canals at the mouth of the Tiber near the new harbor at Portus (*CIL* 14.85 = Thylander B310).[122] Figure 14 simulates a minor flood in the city, a rise in water levels to 10 meters above sea level. (For reference, the Roman Forum was situated at 10 meters above sea level.) In this scenario, Richardson's structure is the only one completely spared from floodwaters. Zevi's is partially hit, and Coarelli's is completely inundated. In the event of a major flood, 15 meters above sea level, all three structures would be affected. Even if Richardson's structure was not the Porticus Minucia Frumentaria, the building could have been a safer place to store grain during

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[121] For example, there was very little space between the Theater and Crypta Balbi, built in Augustus' reign, and Coarelli's *Porticus Minucia Frumentaria*.
[122] See above, p. 81 for the inscription.

the off-season before moving it for distribution. Another factor to consider is that the rising level of the Tiber river would make it more difficult to navigate barges underneath bridges up to the Augustan harbor in the northern Campus Martius. Since the Emporium district was situated before the city's bridges and was just as flood-prone as the Campus Martius, I would weigh access to the Tiber as a more important criteria in choosing a location for the Porticus Minucia Frumentaria. I ultimately find Zevi's proposal more likely in the context of flooding, especially since the structure had multiple stories.

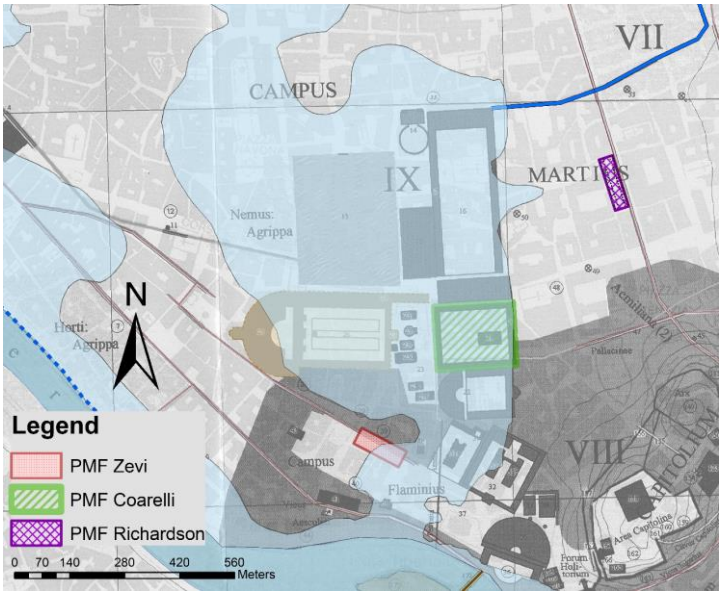

Figure 14: Map of the extent of a minor flood (10 meters above sea level) in Rome.[123]

[123] Aldrete 2007, 45-46 defines 10 meters above sea level as a minor flood, 15 meters above sea level as a major flood, and 20 meters above sea level as an exceptional flood.

The shift from decentralized to centralized distribution of the monthly grain dole shifted the burden of transporting grain from the state to the people. One *modius* of grain weighed between 6.5 and 7 kilograms, around 15 pounds.[124] The 5 *modii* grain allotment would have weighed around 75 pounds. Such a weight must have been difficult to carry especially because the grain would have shifted in transport. Some recipients may have had access to a small cart or a pack animal.[125] Organization of cities on grid plan may have been the dominant form of urban planning in Roman colonies, but the city of Rome grew organically and needed to contour to accommodate the hilly topography. None of the three proposed structures for the Porticus Minucia Frumentaria are especially close to the Subura or to Transtiberim, known as densely inhabited "lower-class" areas. In Chapters 3 and 4, I will show how Claudius' work on the water supply and boundaries centered on the Campus Martius and Transtiberim area, arguing that these areas of the city were more populated during the Claudian period than once thought.

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[124] Rickman 1980, 263. Rickman's estimate is based on a passage of Pliny the Elder (*HN* 18.66).
[125] For a long time, scholars misunderstood the laws restricting cart traffic in cities in the *Tabula Heracleensis*. Kaiser 2011, 174-75 looks at the vocabulary used in the law and concludes that the only type of cart mentioned is the ancient equivalent of an 18-wheeler, massive carts used to move massive quantities of goods.

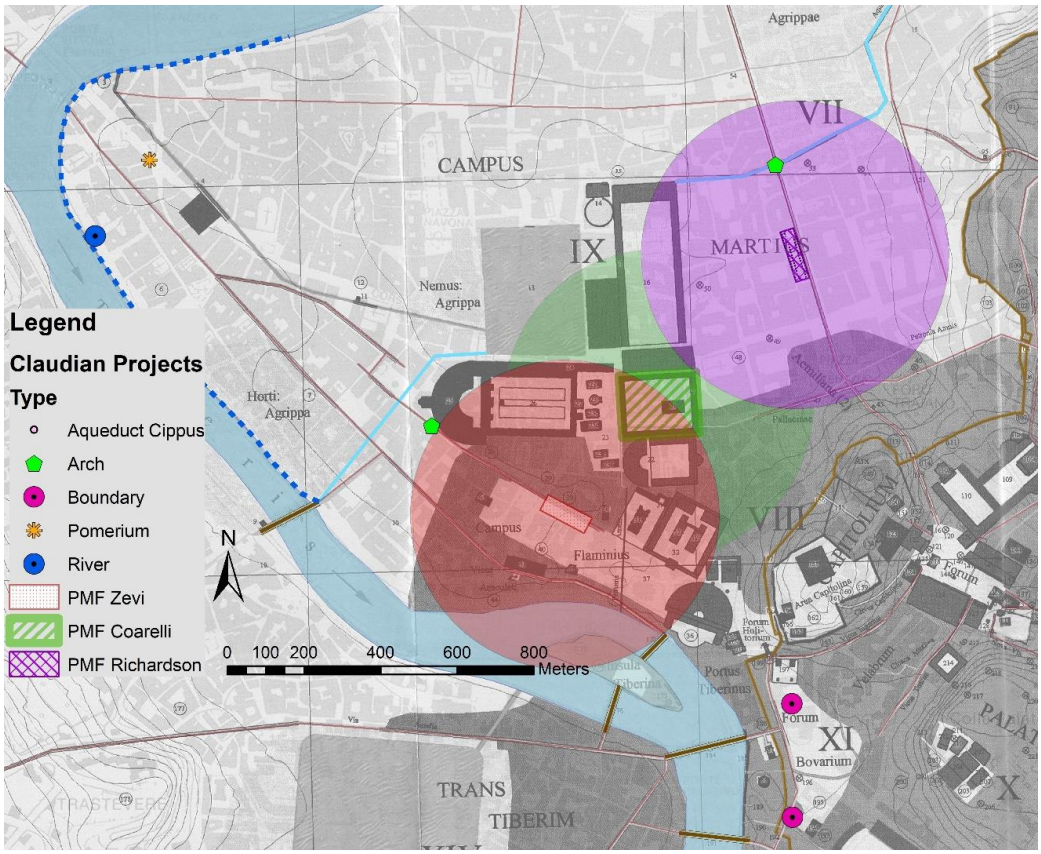

Figure 15: Five-minute walk radius for the Porticus Minucia Frumentaria theories (~400 m radius). Claudian building and infrastructure projects are marked.

With the *Porticus Minucia Frumentaria* and other structures built in the Campus Martius, how did Claudius change and shape the experience of walking through Rome?[126] Modern urban planners use a five-minute walk as a unit of measure for the interaction between different buildings.[127] Figure 15 marks the extent of a five-minute

[126] This is the question Favro 1996 asked of the Augustan period.
[127] The five-minute walk is a traditional unit for urban planning (e.g., http://urban landscapes.info/2010/08/23/the-five-minute-walk-more-than-just-a-circle/). For my approach see, Favro 1996 and Boatwright 2015.

walk approximately 400 meters from each potential location for the Porticus Minucia Frumentaria. One caveat to the 400-meter radius circle is that it represents a five-minute walk "as the crow flies." Considering the limitations of a road network to move directly between two points, the extent of the circle likely covers more distance than one could walk in five minutes. Coarelli's Porticus Minucia Frumentaria was within a five-minute walk of the Theater of Pompey, which Claudius rededicated. Richardson's building on the Via Flaminia was within a five-minute walk of Claudius' rusticated reconstruction of the Aqua Virgo, the Britannic Victory arch, and a set of dynastic statue bases, sometimes called the *Monumentum Claudiaum* on the Via Flaminia.[128] This is also the same area where Caligula destroyed part of the Aqua Virgo while initiating construction on an amphitheater. Claudius seems to have abandoned the amphitheater project in favor of restoring the water supply in the area. A visual message of Claudius' attention to much needed infrastructure is on display with a five-minute walking distance of Richardson's structure. Zevi's structure falls within a five-minute distance from the Theater of Pompey but is also close to sections of the Tiber riverbanks that were shored up under Claudius (*CIL* 6.31545 = *ILS* 5926), and near the area where an inscription reclaims public

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[128] For more on the Monumentum Claudianum, see Boatwright *forthcoming*. Barrett 1991, 7-9 believes that the fragmentary statue bases were part of the Britannic Victory Arch's design, but Rose 1997, 113-15 argues against this interpretation because it would be difficult to incorporate seven statues and their bases into the arch.

territory that fell into private hands (*CIL* 6.919 = *ILS* 211).[129] Though very little archaeological evidence remains along the banks of the Tiber, I believe that we need to imagine some type of additional port infrastructure built in this area under Claudius. Overall, Zevi's proposal for the Porticus Minucia Frumentaria in the area of the Circus Flaminius is the best fit based on access and proximity to the docks, emporium district, and where a large part of the population likely lived.

Under Claudius, new storage warehouses were not limited to the new port at Portus. Richardson's proposal may not have been the Porticus Minucia Frumentaria, but it was certainly a utilitarian structure.[130] If it was built under Claudius, then it was a substantially sized storage facility along a major route in and out of the city. Conveniently located in the Campus Martius, the facility may have stored grain used for the *frumentationes* and could have been a place where those without access to a free grain ration purchased their grain at lower fixed prices.[131] Another Claudian storage facility in the archaeological record with rusticated architecture was on the Oppian hill, north of the Colosseum valley. Nero built over this utilitarian structure with a section of the Domus Aurea, which stands in contrast to Claudius' decision to abandon Caligula's

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[129] See Chapter 4 below for more on these boundary inscriptions.
[130] Boatwright 2012, 16 concludes that the Via Flaminia/Via Lata structure was not the Porticus Minucia Frumentaria, but does agree with Richardson's inclination that it was some kind of utilitarian building.
[131] Aldrete and Mattingly 1999, 190.

amphitheater project to rebuild the Aqua Virgo. The footprint of Claudius' warehouse is still visible in the arrangement of rooms in that section of the Domus Aurea.[132] The construction of Portus probably instigated a buildup of storage facilities along the banks of the Tiber. As we will see in Chapter 4, the epigraphic evidence from boundary stones shows a concerted effort to keep the banks of the Tiber free from the encroachment of private building. Claudius did much facilitate the distribution of grain in the city, regardless of the debates surrounding the status of the senate or the emperor as the figurehead of grain distribution.

2.4 Conclusion

From the beginning to the end of Claudius' reign, efforts to improve the food supply to the city touched upon every step of the process from growing grain to its distribution. Work on draining the Fucine Lake to bring flood relief to the local Marsian Italians and to render arable additional farmland some 50 miles from Rome, as well as creating a safe harbor for ships to anchor at the mouth of the Tiber river, started at the beginning of the Claudian period. The Claudian iteration of the Fucine lake project was completed in 52. Though it was not entirely successful, a large amount of fertile farmland must have been uncovered at this time, a significant achievement. Subsequent

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[132] Caruso and Volpe 1992, 6.

emperors allowed these two projects to languish without enough upkeep, but Trajan and Hadrian later picked up where Claudius left off. We do not know exactly when the new port at Portus was completed, but a significant portion must have been usable by 46 when Claudius erected an inscription celebrating the completion of the canals connecting the port to the Tiber river (*CIL* 6.964 = 14.88 = *ILS* 5797a = Thylander B311). The Porticus Minucia Frumentaria's date is debated, but the most plausible location has archaeological remains from the Claudian period. This structure would remain the location for public grain distributions for at least 300 years, but should not overshadow the other grain storage facilities built during the period.

The second grain shortage in 51 may suggest that the Claudian initiatives were not wholly successful. On the other hand, no emperor completely eradicated the occasional grain shortage. Growing and transporting grain was a multi-step process. Environmental and administrative mishaps could cause the partial or complete destruction of a given crop. The initiatives taken during Claudius' reign to assure the food supply of the capital city made a significant impact on the urban landscape of Rome. In the next two chapters, other infrastructure related building, including the water supply and the various boundaries shored up between 41 and 54, also connect to public health and safety. All these massive building projects required the mobilization of a large workforce, which likely brought employment to urban plebs who did not

qualify for monthly grain distributions and provided some funds to afford buying grain at one of the warehouses in the city.

3. Water for the Masses: Claudius and the Water Supply of Rome

3.1 Introduction

Suetonius marveled at the two new aqueduct lines, the Aqua Claudia and the Aqua Anio Novus, completed during the reign of Claudius, describing them in very positive terms:

> *Claudiae aquae gelidos et uberes fontes, quorum alteri Caeruleo, alteri Curtio et Albudigno nomen est, simulque riuum Anienis novi lapideo opere in urbem perduxit diuisitque in plurimos et ornatissimos lacus.*
>
> [Claudius] brought to the city on stone arches the cool and abundant springs of the Claudian aqueduct, one of which is called the Caeruleus and the other the Curtius and Albudignus, and at the same time the spring of the new Anio, distributing them into very many beautifully ornamented pools. (Suet. *Claud*. 20)

From the time they were built and for several decades following, these two aqueducts provided nearly half of the city's water supply.[1] The construction of those many "beautifully ornamented pools" distributing water from these new aqueducts must have impacted residential communities from a practical and as well as a visual standpoint. Clean water may well have meant more to the people of Rome than the construction of a spectacle building. In fact, when Claudius became emperor in 41, a third aqueduct, the Aqua Virgo, had been disrupted by the construction of an amphitheater by his

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[1] The percentage of Rome's total water supply brought into the city by the Aqua Claudia and Anio Novus is based on data in Frontinus' *De aquaeductu urbis Romae* and is generally accepted by Evans 1994, Bruun 2001, Peachin 2004, and others. See below for more on Frontinus.

predecessor Caligula. Rather than completing the amphitheater, Claudius abandoned the project (Suet. *Calig*. 21.1) and focused on getting the Aqua Virgo repaired by 45 (*CIL* 6.1252a = *ILS* 205). The act of leveling the foundations of an entertainment venue, restoring the arches of an aqueduct, and commemorating the action with a monumental arch inscription made a mark on the urban landscape as well as a statement about the imperial priorities of the time.

I begin with an overview of the various sources for the water supply of ancient Rome. In the following section on water infrastructure and its publicized value, I show that Claudius changed the types of commemoration for water supply improvements in Rome. He thus left a mark on the city and set trends that would be followed by subsequent emperors. I then assess, using ancient data from Frontinus and archaeological and epigraphic evidence, the extent to which Claudian water projects actually improved water supply for public consumption. My maps reveal diachronic changes in the regional distribution of water in the city even under Claudius, allowing a more nuanced understanding of his work than Suetonius and other authors provide. Visualizing the changes under Claudius allows us to consider building as a process and to understand the impact that disruption, repair, and construction of aqueduct lines had on water distribution to regions of the city. My maps strongly suggest that Claudian initiatives improved the potable water supply in areas where poorer populations of

Rome lived, particularly in the flood plains on either side of the Tiber. I argue that the emphasis on infrastructure improvements in the Campus Martius and Transtiberim under Claudius suggests dense inhabitation much earlier at least in the Campus Martius. Claudius' work with Rome's water supply is one instance of an overall emphasis on the Roman people, rather than lavish munificence, during his reign.

3.2 Sources for the Water Supply in Rome

Before analyzing the changes under Claudius, let us consider the ancient evidence for the water supply in the city of Rome. Literary sources range from the historical and encyclopedic sources, like Suetonius, Tacitus, and Pliny the Elder, to more technical writings, like Vitruvius, Frontinus, and the Regionary Catalogues. The vast majority of these are not contemporary to Claudius' reign, but nevertheless provide evidence for the supply, management, and an overall assessment of the water supply system in Rome. Archaeological evidence survives for the aqueducts feeding into Rome, but very little remains of the pipe network, the fountains, cisterns, and public water basins in the city. Epigraphic evidence is perhaps our best source for diachronic changes in the water supply, both in commemoration and management, because it records repairs with dates. As we see below, integrating these various sources is the most effective way to analyze the changes over time in the visual commemoration of water supply related construction and the practical reality of the work done.

3.2.1 Literary Sources

Ancient literary sources for the aqueducts of Rome all agree that these are among the greatest engineering feats of the time. Even a generation before Claudius, the Greek geographer Strabo ranks the aqueducts and sewers among the greatest achievements of the Roman empire (5.3.8). Pliny the Elder, a contemporary of the Claudian period, states that if anyone should calculate the sheer amount of water conveyed by the aqueducts, he would have to admit there is nothing in the world more wondrous (*HN* 36.123). Frontinus, writing in the early 2nd century, conveys a similar sentiment about the aqueducts, while also taking a jab at the "unpractical and idle" monuments of the Egyptians and Greeks (*Aq*. 16). That the aqueducts were a great engineering achievement cannot be disputed. But what more can we learn about them from the ancient literary sources?

Pliny the Elder in his *Historia Naturalis* describes the two new aqueducts completed during Claudius' reign, the Aqua Claudia and Aqua Anio Novus, emphasizing their cost, influence, and overall engineering achievement:

> *Vicit antecedentes aquarum ductus novissimum inpendium operis incohati a C. Caesare et peracti a Claudio, quippe a XXXX lapide ad eam excelsitatem, ut omnes urbis montes lavarentur, influxere Curtius atque Caeruleus fontes et Anien novus, erogatis in id opus HS |MMM| D. quod si quis diligentius aestumaverit abundantiam aquarum in publico, balineis, piscinis, euripis, domibus, hortis, suburbanis villis, spatia aquae venientis, exstructos arcus, montes perfossos, convalles aequatas, fatebitur nil magis mirandum fuisse in toto orbe terrarum.*

The cost of all aqueducts has been surpassed by the most recent, the work on

> which was begun by Caligula and completed by Claudius, inasmuch as the Curtian and Caerulian Springs, as well as the Anio Novus, were made to flow from the 40th milestone at such a height as to supply water to all the hills of the City; disbursed for the work was 350,000,000 sesterces. But if one takes into careful consideration the abundant supplies of water in public buildings, baths, pools, open channels, private houses, gardens, and country estates near the city – the distances traveled by the water, the raising of arches, the channeling of mountains, the leveling out of deep valleys – he shall admit that there has never been anything in the whole world more marvelous. (Plin. *HN* 36.122)

From this passage, we learn that (1) the Aqua Claudia was begun under Caligula, (2) both aqueducts supplied all seven hills of the city, (3) the cost of the work was exorbitant, and (4) the aqueducts provided water to various public and private areas both inside and outside of the city.[2] Pliny the Elder's testimony is seconded by two later, more brief notices. Tacitus mentions the Aqua Claudia among the achievements of Claudius' censorship in 47-48 CE, though Tacitus may be wrong here in the dating.[3] Suetonius, as noted above, remarks on the number of beautiful pools built to distribute the water of the Aqua Claudia and Anio Novus (Suet. *Claud*. 20).

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[2] Many doubt the 350,000,000 sesterces cost of the project reported by Pliny the Elder, with some thinking it the result of an error in textual transition (e.g. Osgood 2011, 177). Coates-Stephens 2004, 35 defends the 350 million figure, pointing to the 180 million sesterces it cost to build the Aqua Marcia 200 years earlier (Front. *Aq*. 7). He argues from the fourteen-year length of the project and the fact that money also had to be allocated towards bureaucratic organization of aqueduct upkeep. Exaggerated figure or not, the fact of the matter is that the cost of building the Aqua Claudia and Aqua Anio Novus was remarkable.

[3] It is unclear from what Tacitus wrote whether the Aqua Claudia and Anio Novus were completed during or were one of the primary initiatives of Claudius' censorship (47-48). If the aqueducts were completed by 48, this would mean that the aqueducts started supplying water earlier than the official dedication dates inscribed on the Porta Maggiore arch (*CIL* 6.1252a = *ILS* 205) and written by Frontinus (*Aq*. 1.13).

In contrast, Claudius' repairs to the Aqua Virgo are not mentioned in the literary sources and are known only through epigraphic and archaeological evidence.[4] The absence of the Aqua Virgo repair from the literary sources reflects the emphasis placed on the original builder of a structure.[5] Several sources mention Agrippa's construction of the Aqua Virgo and the opening of his baths in 19 BCE (Frontin. *Aq*. 1.10; Plin. *HN* 31.42). For more detailed information on each aqueduct and the management of the water supply, however, we must turn to other sources.

Vitruvius, a Roman architect of the late 1st century BCE, includes a book on water engineering in his treatise *De Architectura*. He justifies the inclusion of a whole book (of his ten-book work) on water by emphasizing that water is an essential resource for life, for pleasure, and for daily use (Vitr. *De Arch.* 8.1.1: [*Aqua*] *est enim maxime necessaria et ad vitam et ad delectiones et ad usum cotidianum*). Vitruvius wrote this book prior to Claudius' reign and even before Augustus' major work on the aqueducts in 11-9 BCE. Nevertheless, Vitruvius is our best source for understanding how aqueduct *castella* functioned, for example.[6] While we have a substantial amount of information on the

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[4] The Aqua Virgo repair is only briefly mentioned in Osgood's book on image and power under Claudius (Osgood 2011, 180).
[5] The emphasis placed on the original builder of a structure can be seen in Augustus' *Res Gestae* when he explicitly says that he rebuilt the Theater of Pompey without inscribing his own name (*RG* 20). The most famous example of this practice is Hadrian's restoration of Agrippa's inscription on the Pantheon after rebuilding the structure (*CIL* 6.896) (see Boatwright 2013).
[6] Evans 1994, 7.

courses of the aqueducts, these structures did not carry water directly from the source to individual fountains or homes, but instead terminated in *castella*, essentially water collection tanks. According to Vitruvius, there were three main pipes connected to a *castellum*—one pipe carried water to basins and fountains, one to the baths, and one to private homes (*De Arch*. 8.6.1-2). In practice, the archaeological evidence seems to be at odds with Vitruvius. Pipes connected to surviving *castella* in Pompeii and Nimes do not distribute based on function but on geography.[7] Each pipe connected to the *castellum* carried water to different areas of the city. The highly theoretical nature of Vitruvius' treatise may explain the discrepancies between the architect's descriptions and actual practice.[8]

Sextus Julius Frontinus, who served as the water commissioner of the aqueducts under Nerva in 97, wrote a treatise *De aquaeductu urbis Romae*.[9] No new aqueducts were built between the reign of Claudius and the time Frontinus was writing, so his treatise can serve as a useful source for the water supply of Rome during the Claudian period.[10] For each aqueduct, Frontinus notes which of the fourteen Augustan regions it served.

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[7] Evans 1994, 8 n. 28 provides bibliography on the water distribution systems of Pompeii and Nimes. See Keenan-Jones 2015 for a reevaluation of Pompeii's water distribution network.
[8] Bruun 1991, 16; Evans 1994, 7-8.
[9] Rodgers 2004. For more information on Sextus Julius Frontinus, see *PIR* [2] I 322. The original title of the work is lost. *De Aquaeductu Urbis Romae* comes from the earliest surviving manuscript dating to the 12th century.
[10] Noreña 2006 uses Frontinus as a source for the Augustan period. The Claudian period is a half century closer to the time Frontinus was writing.

For example, the Aqua Appia, the first aqueduct of Rome, served seven of the fourteen regions when Frontinus was writing (Regions 2, 8, 9, 11, 12, 13, 14) (Frontin. *Aq*. 79).[11] His information will allow us to investigate the regional distribution of aqueduct lines during Claudius' reign.

Other useful data in Frontinus' treatise are numbers for the amount of water distributed by each aqueduct. Frontinus breaks down the distribution of water *intra urbem*, water brought into the city, into three categories:[12] *Nomine Caesaris* (imperial use), *privatis* (private use), and *usibus publicis* (public use).[13] The *usibus publicis* category is further divided into *castra* (water collection tanks),[14] *munera* (probably fountains), *lacus* (public basins), and *opera publica* (public works).[15]

Table 1 tabulates the number of *quinariae*, a Roman unit of water supply, brought in by each aqueduct for each of the three major categories.

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[11] For more on the Aqua Appia, see Richardson 1992, 15-16, Evans 1994, 65-74, De Kleijn 2001, 10-12.
[12] There is not enough evidence in Frontinus' text to know exactly where the cut-off point between *intra* and *extra urbem* was. Bruun 1991, 148 proposes the largest radius for Frontinus' *urbs* of the seventh milestone on outgoing roads. I focus on the *intra urbem* quantities of Frontinus in my analysis.
[13] Noreña 2006, 95.
[14] Frontinus' definition of *castra* is difficult to discern. Wilson 2007, 440-442 accepts Bruun's argument that the *castra* were not narrowly defined as water supplied to camps or the stations of the *cohortes vigilium*, but instead just a specialized feature of the water supply system, like cisterns on localized sections of the system (Bruun 1991, 254-56).
[15] The Latin term *lacus* has a wide range of meanings but in the context of water supply it means a public basin filled by the waters of an aqueduct. Noreña 2006, 93n10 nicely summarizes the evidence for this definition of a *lacus*. See Del Chicca 1997 for a more detailed investigation into the terminology of public fountains in Rome. See Haintzman 1975, 25-29, Bruun 1991, 102; Evans 1994, 8-11 for more on these terms used by Frontinus for divisions in water supply use.

Table 1: Distribution of water *intra urbem* by aqueduct as reported by Frontinus, measured in quinariae (97).

Aqueduct	Nomine Caesaris	Privatis	Usibus Publicis
Aqua Appia	151	194	354
Aqua Anio Vetus	64.5	490	552
Aqua Marcia	116	543	443.5
Aqua Tepula	44	237	50
Aqua Julia	18	196	383
Aqua Virgo	509	338	1457
Aqua Alsietina	?	?	?
Aqua Claudia/Anio Novus	816	1567	1115

Although at first sight, one might expect the *Nomine Caesaris* to include water for public use; structures like imperial bathing complexes, entertainment buildings, markets, and porticos are listed among the *opera publica* in the *usibus publicis* category.[16] The generally accepted definition for Frontinus' *Nomine Caesaris* is water "delivered at the emperor's disposition to supply the imperial palace and buildings directly under his control, to include staff headquarters and offices."[17] Since the focus of this study is on water supply improvements for the general populace under Claudius, we will be most concerned with the *usibus publicis* category, acknowledging that some of the water brought in *Nomine Caesaris* may also have been distributed for public use.

[16] Lanciani 1881, 581; Hainzmann 1975, 28; Robinson 1992, 78.
[17] Evans 1994, 9.

Several scholars believe that much of the population drew their water from the *lacus*, the public basins, but Bruun notes that people could have also obtained water from *munera* and *opera publica*.[18] I am inclined to follow Bruun and assume that the daily need for clean water would have driven people to obtain water from wherever they could find it—whether it be from a designated public basin, a decorative fountain, or some kind of public building. For my purposes, "public access water supply" will include *lacus*, *munera*, and *opera publica*. We must also recognize that other sources of water like wells, cisterns, and springs existed to supplement this supply, even though the dearth of evidence makes it difficult to estimate their overall impact.[19] The very existence of aqueducts in Rome starting in the fourth century BCE proves that wells, cisterns, and springs could not sustain the population on their own.

Some of Frontinus' water supply data, however, cannot necessarily be taken as fact. Bruun provides a general disclaimer about using Frontinus' measurements, noting Frontinus was not an engineer but a member of the senatorial class serving in a bureaucratic position.[20] Was the water supply and its maintenance truly revolutionized under his supervision, or is that simply the story Frontinus wanted to tell with his data?

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[18] See Rodgers 2004, 136-38, Blackman and Hodge 2001, 119-20, and Noreña 2006, 93 for the viewpoint that people drew water only from *lacus*, and Bruun 1991, 102-3 and De Kleijn 2001, 78 for the argument that people may have drawn water from other public water sources.
[19] Colini 1941, 71-80.
[20] Bruun 1991, 370.

At no point in the narrative does Frontinus explicitly detail how measurements were taken, but he does spend an extended period of time describing the various units of measure (*Aq.* 24-63).[21] D. R. Blackman and A. T. Hodge make a strong case that the amount of water that had been lost by illegal tapping was exaggerated by Frontinus to bolster his own numbers and legacy.[22] Regardless, much of Frontinus' data was taken directly from the imperial records, the imperial *commentarii* (*Aq*. 64). Some of the numbers may have been inflated, but his figures for the amount of water supplied to the city from each aqueduct relative to the others can still be used.[23] In other words, Frontinus can at least give us a general idea of the percentage of the total water supply carried into the city by individual aqueducts.[24]

3.2.2 Regionary Catalogues

As I mentioned above, in addition to listing various monumental structures, the Regionaries also give numerical counts of various types of structures organized by region. The structures counted for each region include: *insulae*, warehouses, baths, and most important for this study, *lacus* or public basins. I will use the numbers of public basins per region below. The definitive boundaries of the fourteen regions remain a

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[21] Blackman and Hodge 2001, 126.
[22] Blackman and Hodge 2001, 35.
[23] See pp. 43-45 below for more on how Frontinus' data can be used effectively.
[24] Keenan-Jones et al. 2015, 4. Several scholars use Frontinus' data, including Bruun 2001, 55; Evans 1994; Peachin 2004, 127-29.

subject of debate because we simply do not have enough evidence to confirm how far regions on the periphery extended before the area was considered *extra urbem*, outside the city. In fact, the regional boundaries must have been dynamic, changing over time to accommodate demographic changes in the city.[25] We also cannot say much about the demography of these various regions at any point in time. To fill in the gaps in the literary sources, we must turn to the surviving archaeological and epigraphic material.

3.2.3 Archaeological and Epigraphic

A significant body of archaeological and epigraphic material survives for the ancient aqueducts of Rome, thanks to evidence *in situ* and the documentation efforts from the seventeenth century to modern times.[26] Rodolfo Lanciani's map, the *Forma Urbis Romae*, captures the ancient remains of Rome known in the period from 1893 to 1901, and serves as a valuable historical document of the city before extensive changes during Mussolini's rule and beyond. Thomas Ashby, known for his contribution to a topographical dictionary of ancient Rome with Samuel Ball Platner in 1929, also published a monograph on the aqueducts of ancient Rome. Much of Ashby's data came from the work of a team of Italian archaeologists, who collected detailed measurements

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[25] Platner and Ashby 1929, 444-47.
[26] Lanciani 1901; Ashby 1935; Van Deman 1934. See Evans 2002 for the text and an accompanying commentary on Fabretti's writings on the aqueducts in the seventeenth century.

of the extant aqueducts in the early twentieth century.[27] All subsequent work on the water supply of Rome, including the current study, are deeply indebted to the information collected, compiled, and analyzed by these scholars.

From the various *castella*, water was distributed via a network of *fistulae*, pipes made of lead (Front. *Aq*. 20.2). Thousands of fragments from these pipes have been recovered in Rome, but not enough to reconstruct the distribution network on a micro-scale. Bruun estimates that we have only around 4-5% of the total number of *fistulae* from the ancient period.[28] Of that 4-5%, only half have documented find spots.[29] This relative dearth of evidence did not stop Gerda De Kleijn from mapping the fistulae with known provenance.[30] The *fistulae* appear to have come in two types—those stamped with the name of the emperor, beginning with Augustus, and those stamped with the names of private individuals. Of all the *fistulae* found *in situ*, three are stamped with the name of Claudius.[31] Although this evidence is not enough to draw sweeping conclusions about the water supply system under Claudius, it does pose interesting questions when mapped alongside other inscriptions (Fig. 23). One of the *fistulae* appears in the northern Campus Martius, near the bank of the Tiber river. I now turn to

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[27] Reina, Corbellini, and Ducci 1917.
[28] Bruun 1991, 20.
[29] Bruun 1991, 66-71.
[30] See De Kleijn 2001, chapter 5 for the data set and maps.
[31] The three *fistulae* stamped with Claudius' name are *CIL* 15.7269a; *CIL* 15.7269b; *MNR* inv.no. 61136-8. Figure # below maps their locations in the city.

an investigation of the visual impact of Claudius' water supply improvements in Rome and then an analysis of to what extent these changes actually improved water supply for the people of Rome, particularly poorer populations dependent on public basins.

3.3 Monumental Advertisement of Water Supply Improvements

To judge by the surviving evidence, the monumental commemoration of aqueduct construction and repair did not become widespread until the Augustan period.[32] One method of marking aqueduct repairs was with *cippi*. These were installed to function like milestones, marking aqueduct channels and commemorating work done.[33] These stones appear to be a phenomenon limited to the aqueducts feeding into the city of Rome and were in use for a short period of time. No aqueduct *cippi* have been found on Italian or provincial aqueducts, and none date earlier than Augustus or later than 44/45.[34]

The common formulae for aqueduct *cippi* include an abbreviation of the aqueduct name at the top, followed by imperial titulature, the *cippus* number, and the distance to the next *cippus*, always 240 Roman feet.[35] The stones were usually made of travertine, around two meters tall and 70 centimeters wide, with inscribed letter heights

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[32] To my knowledge, there are no surviving Republican inscriptions marking aqueduct repairs in the city of Rome.
[33] Dembskey 2009, 72.
[34] Hodge 2002, 103.
[35] Not enough aqueduct *cippi* survive to assess how consistently these markers were placed in the city (Hodge 2002, 103).

between two and four centimeters. Augustan examples of aqueduct *cippi* have been found for the Aqua Anio Vetus (*CIL* 6.1243a) and the Aqua Julia, Tepula, and Marcia (*CIL* 6.1249b).[36] Two Tiberian examples have been found for the Aqua Virgo (*CIL* 6.1253a = 6.31565a; *CIL* 6.1253b = 6.31565c). Claudius continued this tradition with several *cippi* found for the Aqua Virgo, dating to 44/45 (*CIL* 6.1254 = 6.31565b = *ILS* 5747b (Fig. 1); *CIL* 6.40880 = *AE* 1939, 54; *AE* 1994, 287; *CIL* 6.40881 = *AE* 1974, 145). The Claudian inscriptions on the Aqua Virgo document its repair process, signifying that part of the repair reached completion by 44/45 (Fig. 16):

Virg(o)
Ti(berius) Claudius Drusi
filius Caesar
Aug(ustus) Germanicus
pontifex maximus
tribunic(ia) potestat(e) IIII
co(n)s(ul) III imp(erator) VIII p(ater) p(atriae)
XLV P CCXL

> [Aqua] Virgo. Tiberius Claudius, son of Drusus, Caesar Augustus Germanicus, pontifex maximus, with tribunician power for the fourth time, consul for the third time, imperator eight times, father of his country, 45th marker, 240 feet. (*CIL* 6.31565d = *ILS* 5747b)

The Claudian *cippi* (see map, Fig. 17) on the Aqua Virgo are the latest dated examples of aqueduct *cippi* found in Rome.

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[36] There are numerous Augustan aqueduct *cippi* in addition to the examples given above.

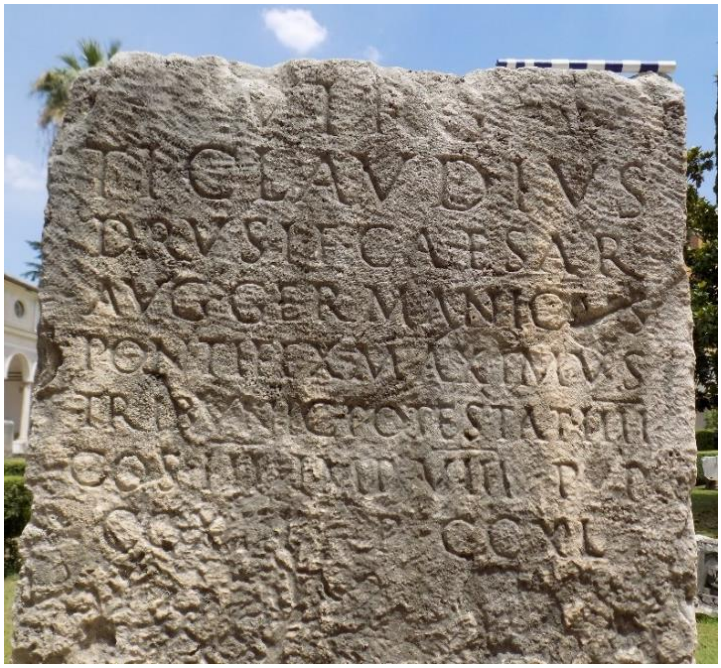

Figure 16: Example of an aqueduct cippus dating to the Claudian period now in the Museo Nazionale: Terme di Diocleziano.

The fact that aqueduct *cippi* all date within a 50-year time span and are not found outside the city of Rome raises questions about their intended function. If the aqueduct *cippi* were intended for administrative purposes, why did they fall out of use? I suggest that they were not replaced and fell out of use because aqueduct *cippi* were not necessary for aqueduct maintenance. Instead, they reflect a desire for commemoration in the Augustan period. Claudius installed several aqueduct *cippi* along the course of the Aqua Virgo early in his reign, but none have been found along the course of the

Aqua Claudia and Anio Novus, including the underground portions, the two aqueducts he completed by 52.[37]

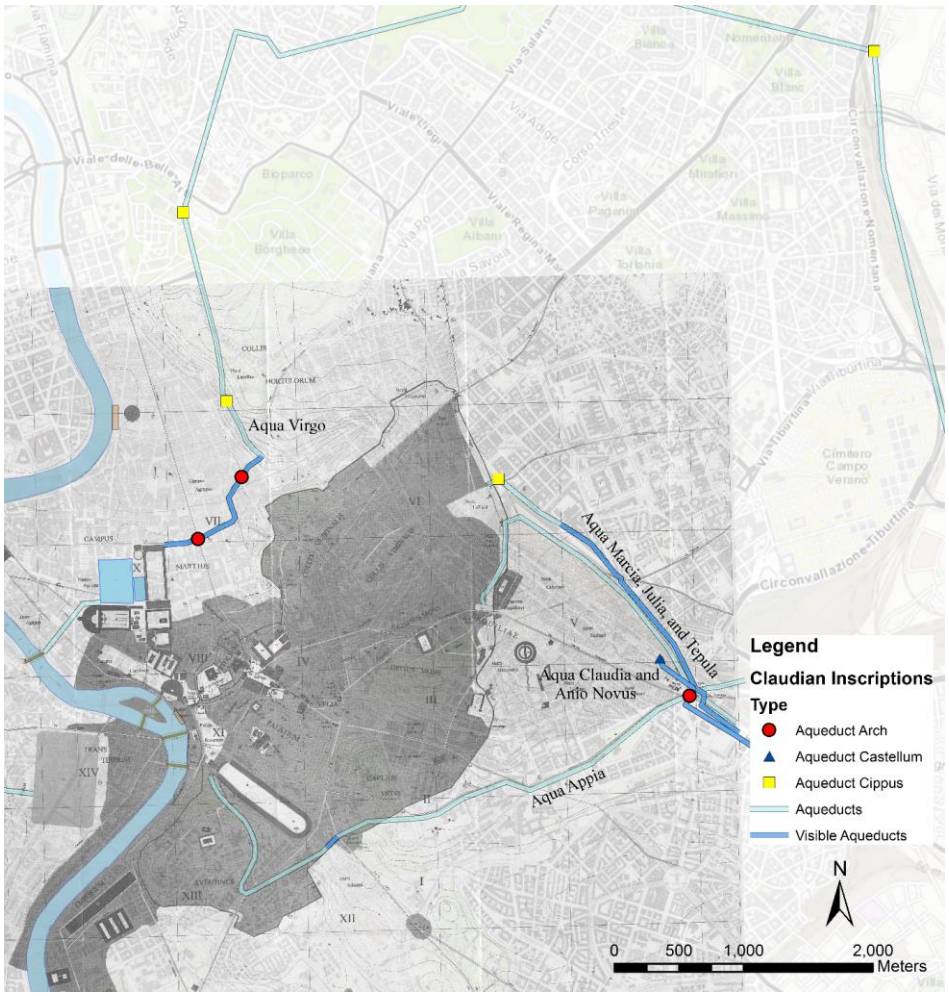

Figure 17: Map of monuments and inscriptions relating to water supply improvements put up during Claudius' reign.

[37] Tacitus mentions the two aqueducts among the achievements of Claudius' censorship in 47-48 (Tac. *Ann*. 11.13). It is unclear from what Tacitus wrote whether the Aqua Claudia or Anio Novus were completed during Claudius' censorship (47-48) or were one of its primary initiatives. If the aqueducts were completed by 48, this would mean that they started supplying water earlier than the official dedication dates inscribed on the Porta Maggiore arch (*CIL* 6.1252a = *ILS* 205) and recorded by Frontinus (*Aq*. 1.13).

Another method of advertising imperial improvement to the water supply was with inscriptions affixed above aqueduct arches at important crossroads. Augustus was the first to do this at the Porta Tiburtina, on the eastern edge of the city where the conduits of the Aqua Julia, Tepula, and Marcia crossed the Via Tiburtina.[38] The short inscription dates to 5/4 BCE and claims the renovation of all aqueduct channels:

> Imp(erator) Caesar Divi Iuli f(ilius) Augustus | pontifex maximus co(n)s(ul) XII | tribunic(ia) potestat(e) XIX imp(erator) XIIII | rivos aquarum omnium refecit
>
> Imperator Caesar, son of divine Julius, Augustus, Pontifex Maximus, Consul for the 12th time, in his 19th year of tribunician power, imperator 14 times, rebuilt the courses of all the aqueducts. (*CIL* 6.1244 = *ILS* 98)

After the last *cippus* inscription of 44/45, a Claudian arch inscription, with letter heights between 15 and 20 cm tall, marks the completion of repairs on the Aqua Virgo in 45:

> Ti(berius) Claudius Drusi f(ilius) Caesar Augustus Germanicus | pontifex maximus trib(unicia) potest(ate) V imp(erator) XI p(ater) p(atriae) co(n)s(ul) desig(natus) IIII | arcus ductus aquae virginis disturbatos per C(aius) Caesarem | a fundamentis novos fecit ac restituit
>
> Tiberius Claudius Caesar Augustus Germanicus, son of Drusus, pontifex maximus, in his fifth year of tribunician power, imperator 11 times, father of his country consul designate for the fourth time, rebuilt and restored from their foundation the arches of the Aqua Virgo destroyed by Gaius Caesar. (*CIL* 6.1252a = *ILS* 205)

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[38] For more on the Porta Tiburtina, see *LTUR* 3.312-13, s.v. "Muri Aureliani: Porta Tiburtina," (G. Pisani Sartorio).

The detail provided in this inscription stands in contrast to the short rebuilding inscription of Augustus. The Claudian inscription describes building, and restoring from the ground up, the arches of the Aqua Virgo destroyed by Caligula.

The Aqua Virgo inscription was located near the modern Via Nazzereno (Fig. 18) and fragments of an identical inscription were found on the opposite side of the arch (*CIL* 6.1252b). Since the same inscription could be seen on either side of this arch, this must have been a crossroads with enough foot traffic for people to be able to see and appreciate Claudius' rebuilding of the aqueduct arches destroyed by Caligula. Yet the location of the arch does not coincide with any known major road through the city (see map, Fig. 17). The arch at the crossing of the Aqua Virgo and Via Flaminia, the main route out of the city to the north, was reserved for commemorating Claudius' victory in Britain and was not completed until 51.[39] Perhaps this arch spanned an area marking a road or path through the Campus Agrippae.[40]

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[39] For more on the Claudius' British Victory Arch, see Barrett 1991, Richardson 1992, 24, *LTUR* 1.85-86, s.v. "Arcus Claudii," (E. Rodríguez Almeda). The fact that the British Victory Arch inscription (*CIL* 6.920 = *ILS* 216) dates six years after the first Aqua Virgo arch inscription (*CIL* 6.1252a = *ILS* 205) indicates that the aqueduct was likely completely repaired long before the arch was decorated for the British Victory.
[40] *LTUR* 1.217, s.v. "Campus Agrippae," (F. Coarelli); Richardson 1992, 64.

Figure 18: Arch of the Aqua Virgo. The inscription records Claudius' rebuilding (photo by author).

Very little is known about the Campus Agrippae besides that it was a tract of land Romans could walk through (Aul. Gell. 14.5.1) and it housed the Porticus Vipsania somewhere within its space.[41] If the inscriptions were not at an important crossroad, it is tempting to connect its location and focus on rebuilding with the actual spot where

[41] *LTUR* 4.152, s.v. "Porticus Vipsania," (F. Coarelli); Richardson 1992, 319-20; Boatwright 2015.

Caligula's amphitheater destroyed the arches of the aqueduct. But Suetonius describes the location of the amphitheater of Caligula as *iuxta Saepta*, next to the Saepta (*Calig*. 21), leading most scholars to locate the building west of the Via Flaminia, around 500 meters away from the arch inscription.[42] I would argue that because the amphitheater was effectively erased by Claudius, physical evidence for its location would not have been visible to Suetonius, writing nearly a century later. The Suetonius reference does not eliminate the possibility that the Via Nazzereno inscription marks the spot where the amphitheater stood. If the amphitheater had been next to the Saepta, flanking the Via Flaminia, then Claudius may have elected to save the closest arch for commemorating his victory in Britain, and use the next crossroad for an inscription about reconstructing the arches of the Aqua Virgo. Regardless, the location of the arch must have held special significance, despite our lack of knowledge of its surroundings at the time.

Claudius installed a third aqueduct arch inscription at the convergence of the Via Praenestina and the Via Labicana on the eastern side of the city, commonly known as the Porta Maggiore. This inscription, placed at a towering height of 26 meters, spanning 30 meters with letter heights between 60 and 70 centimeters, records the dedication of the Aqua Claudia and Aqua Anio Novus in 52:[43]

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[42] *LTUR* 1.35, s.v. "Amphitheatrum Caligulae," (G. Palombi); Richardson 1992, 6-7.
[43] *LTUR* 3.310-11, s.v. "Porta Praenestina," (G. Pisani Sartorio); Richardson 1992, 306-7.

> *Ti(berius) Claudius Drusi f(ilius) Caisar Augustus Germanicus pontif(ex) maxim(us) | tribunicia potestate XII co(n)s(ul) V imperator XXVII pater patriae | aquas claudiam ex fontibus qui vocabantur caeruleus et curtius a milliario XXXXV | item anienem novam a milliario LXII sua impensa in urbem perducendas curavit*
>
> Tiberius Claudius, son of Drusus, Caesar Augustus Germanicus, pontifex maximus, with tribunician power twelve times, consul five times, imperator 27 times, father of his country, had the waters of the Claudia brought to Rome from the springs called Caeruleus and Curtius at the 45th milestone, and likewise the Anio Novus from the 62nd milestone, both at his own expense. (*CIL* 6.1256)

Below the inscription of Claudius are inscriptions of Vespasian[44] and Titus[45] commemorating later repairs on the aqueducts (Fig. 19). The placement of Vespasian's and Titus' rebuilding inscriptions just below Claudius', and the similarities in the language used in all show that Claudius catalyzed a shift in the commemoration of infrastructure projects. For example, all three inscriptions emphasize that the money for the projects came from their own personal funds, *sua impensa*.[46] Both Vespasian and

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[44] *CIL* 6.1257: *Imp(erator) Caesar Vespasianus August(us) pontif(ex) max(imus) trib(unicia) pot(estate) II imp(erator) VI co(n)s(ul) III desig(natus) IIII p(ater) p(atriae) | aquas curtiam et caeruleam perductas a divo claudio et postea intermissas dilapsasque | per annos novem sua impensa urbi restituit:* Imperator Caesar Vespasian Augustus, Pontifex Maximus, with tribunician power two times, imperator six times, consul three times, consul designate four times, father of his country, repaired at his own expense the Curtian and Caerulean waters, which had been led to the city by the deified Claudius and had later fallen into intermittent use and disrepair for nine years.

[45] *CIL* 6.1258: *Imp(erator) T(itus) Caesar Divi f(ilius) Vespasianus Augustus pontifex maximus tribunic(ia) | pater patriae censor co(n)s)ul VIII | aquas curtiam et caeruleam perductas a Divo Claudio et postea | a Divo Vespasiano patre suo urbi restitutes cum a capite aquarum a solo vetustate dilapsae essent nova forma reducendas sua impensa curavit:* Imperator Titus Caesar son of divine Vespasian Augustus, pontifex maximus, with tribunician power ten times, imperator seventeen times, father of his country, censor, consul eight times, brought in at his own expense the Curtian and Caerulean waters, brought in by the deified Claudius and afterwards repaired by his own father, the deified Vespasian, restored with new structures, beginning from its source, after the aqueduct was ruined to its foundations from age.

[46] Panciera 1998 examines the use of the phrase *sua impensa* in imperial building inscriptions. In addition to the Porta Maggiore, a small shrine in the Colosseum valley, possibly the *Curae Veteres,* was rebuilt by

Titus mention extensive repairs, but this is likely an exaggeration of the actual maintenance work completed on the Aqua Claudia and Anio Novus during their respective reigns. It seems unlikely that the aqueducts would have deteriorated so much as to be disrupted for nine years, only ten years after their dedication. Even more unlikely is the notion that by 81, Titus would have needed to completely rebuild entire sections.

Figure 19: The western side of the Porta Maggiore with Claudius' inscription at the top, Vespasian's in the middle, and Titus' at the bottom (photo by author).

Claudius *sua impensa* (Panciera 1996). Augustus similarly emphasized in his *Res Gestae Divi Augusti*, an inscription detailing his achievements during his reign, the utilization of his own funds to better the state. Drawing attention to the personal funds contributed to improve the state became an important part of an emperor's epigraphic presence in the city. For example, chapter 15 outlines various distributions of money given to the people, some out of his own patrimony (*ex patrimonio meo*).

The language in Vespasian's and Titus' rebuilding inscriptions may be more symbolic than a reflection of reality. Edmund Thomas and Christian Witschel compared archaeological remains to rebuilding inscriptions and found—predictably enough—that rebuilding inscriptions seem to overstate the amount of destruction and the amount of repair work completed.[47] The archaeological evidence for the Pantheon accounts for only a few localized Severan improvements that do not match the language in the rebuilding inscription of Septimius Severus and Caracalla (*CIL* 6.896).[48] Garrett Fagan sought to nuance Thomas and Witschel's conclusions with a reminder that what survives in the archaeological record is not necessarily complete. A contemporary audience witnessed the rebuilding process. If little work was done on the monument, then a rebuilding inscription that vastly overstated the repairs would carry little weight.[49] He holds that the third-century work on the Pantheon was primarily decorative and is now lost, having been looted over the years.[50] In contrast, the Porta Maggiore is a much less ornate structure. The Flavian emperors must have made repairs to the Aqua Claudia and Aqua Anio Novus, but the language of complete destruction

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[47] Thomas and Witschel 1992, 137.
[48] Boatwright 2013, 20-21.
[49] Fagan 1996, 82.
[50] Fagan 1996, 91.

was likely an exaggeration. The archaeological evidence does not reflect extensive rebuilding after the Claudian period.[51]

Based on Vespasian's inscription, the nine-year disruption began in 62, in the second half of Nero's time in power. Vespasian distinguished himself, a beneficent emperor focused on repairing the water supply for the people, from Nero, a prodigal emperor focused on building himself a sprawling palace. Vespasian's connection with Claudius can be seen in Vespasian's completion of the massive Temple of the Divine Claudius complex on the Caelian hill that was begun shortly after Claudius' death by Agrippina and abandoned by Nero.[52]

The descriptive monumental inscriptions were only part of the visual impact made by water supply building during Claudius' reign. The above ground conduits of the Aqua Virgo, Aqua Claudia, and Aqua Anio Novus were monumentalized under Claudius with travertine arches with the distinct rusticated masonry.[53] The arches depicted in figures 18 and 19 show this rustication, recalling architectural styles of the

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[51] Coates-Stephens 2004, 38-39. Albertini 1906 argued that parts of the Aqua Claudia and Aqua Anio Novus were rebuilt by Trajan, but this has been disproved by Rodgers 1986.
[52] Darwall-Smith 1996, 50-51. See *LTUR* 1.277-78, s.v. "Claudius, Divus, Templum (Reg. II)," (C. Buzzetti) and Richardson 1992, 87-88 for more on the Temple of the Divine Claudius.
[53] Darwall-Smith 1996, 33 uses the example of the use of rustication during Claudius' reign as evidence of an emperor's influence on building in the city. Osgood 2011, 177 refers to Claudius' rustication as "a sort of baroque repudiation of the more austerely classical architecture favored in Augustan Rome."

past. This style was used only during Claudius' reign or to celebrate Claudius, as seen in the archaeological remains of the Temple of Divine Claudius.

The design of the Porta Maggiore, which dates to 52 in Claudius' reign, has been interpreted as a combination of the architectural vocabulary of a triumphal arch, monumental gate, and religious *aediculae* (small shrines).[54] The arch borrows from these structures, but when compared to other surviving triumphal arches, gates, and religious structures, the Porta Maggiore has some distinguishing features. First, the size of the arch is larger than the other surviving triumphal arches in the city. The Arch of Constantine, for instance, stands at 20 meters tall, compared to the Porta Maggiore at 27 meters tall. Naturally, the height of the arch was driven by the engineering design of the aqueduct, which carried water to all areas of the city, including the Palatine hill. Both Vespasian and Titus obviously thought its placement and visibility was significant enough to leave their mark on the monument. The smaller opening between the two primary bays is similar to what can be seen on the well-preserved Pons Fabricius and the ruins of the Pons Aemilius. On bridges, that opening is not merely aesthetic, but functional. When the Tiber flooded, this opening relieved pressure on the structure, allowing water to flow through, instead of placing additional force on the center pier. As I will show in Chapter 4, much of Claudius' work in the city centered on the Tiber

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[54] Coates-Stephens 2004, 41-42.

river and its banks. The Porta Maggiore combines architectural elements of triumphal arches, monumental gates, *aediculae*, and bridges. It is a truly unique structure that represents the fusion of the practical and decorative monumental elements.

In addition to the aqueduct arches, an eighteenth-century engraving by Giovanni Battista Piranesi depicts the remains of an enormous *castellum* adjacent to the Porta Maggiore used to house the water of the Aqua Claudia and Aqua Anio Novus. This was likely built during Claudius' reign (Fig. 20).[55] Such an imposing structure, clearly visible from the Porta Maggiore, must have had a visual impact on the urban landscape with its basilica-like form.[56] Rustication may not have remained in style beyond Claudius' reign, but the monumentalization of aqueduct repairs certainly did. Subsequent emperors followed Claudius' lead in the language and placement of aqueduct arch inscriptions as aqueduct *cippi* fell out of use.

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[55] See below for more information on *castella* and their purpose in the water supply system of Rome.
[56] Not all examples of water collection tanks were built above ground. The Piscina Mirabilis in Campania near the Portus Julius was a massive underground cistern. It had a similar basilica-like barrel vault construction to the *castellum* from Piranesi's engraving, but underground.

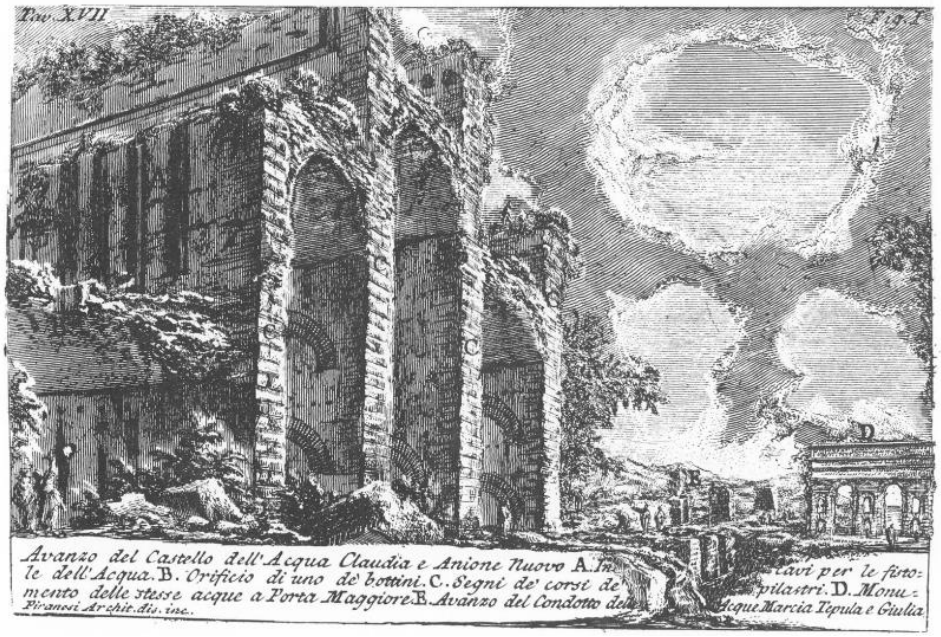

Figure 20: Engraving of the castellum of the Aqua Claudia and Aqua Anio Novus and the Porta Maggiore by Giovanni Battista Piranesi (1720-1778).

3.4 Practical Assessment of Water Supply Improvements under Claudius

The emphasis placed on improving the water supply under Claudius was clearly disseminated through *cippi*, monumental above-ground aqueduct arches, and an imposing *castellum* collecting and distributing aqueduct waters near the Porta Maggiore. In this section, I will attempt to tackle a more difficult question: to what extent did the more noticeable representation of water supply improvements translate to actual improvements in supply and distribution under Claudius? I use data from Frontinus, archaeological and epigraphic sources, the Regionary Catalogues, and GIS to map out diachronic changes in the regional distribution of aqueducts.

With imperial titulature providing dates, the aqueduct inscriptions preserve information for examining change over time in the water supply during the reign of Claudius, a topic that has not yet been investigated.[57] These aqueduct inscriptions have enabled me to create three separate maps to document and assess change over time in the water supply, providing snapshots at 41, the beginning of Claudius' reign; at 45, the completion of repairs on the Aqua Virgo; and at 52, the dedication of the Aqua Claudia and Anio Novus. The aqueducts could have begun supplying water prior to the official dedication, so these dates simply provide a *terminus ante quem* for their completion. The reality must have been more of a continuous change rather than discrete moments as sections of the aqueducts were finished.

No new aqueducts were built between the reign of Claudius and the time Frontinus was writing, so his treatise can serve as a useful source for the water supply of Rome during the Claudian period.[58] For each aqueduct, Frontinus identifies which of the fourteen Augustan regions it supplied, so while a lack of evidence for the piped network prevents a small-scale reconstruction of the distribution, we can look at distribution on a larger, more regional scale. Table 2 represents this data.

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[57] No one, to my knowledge, has looked at change over time in the water supply during the reign of a single emperor. Most either focus on the water supply at one specific moment (e.g. Noreña 2006) or take a broad chronological approach (e.g. Bruun 1991; De Kleijn 2004).
[58] Noreña 2006 uses Frontinus as a source for the Augustan period. The Claudian period is a half century closer to the time Frontinus was writing.

Table 2: The distribution of each aqueduct by region according to Frontinus.[59]

Region	Appia	Anio Vetus	Marcia	Tepula	Julia	Virgo	Alsietina	Claudia	Claudia/ Anio Novus	Total (# of aq)
I Porta Capena		X	X						X	3
II Caelimontana	X				X			X	X	4
III Isis et Serapis		X	X		X				X	4
IV Templum Pacis		X	X	X					X	4
V Esquiliae		X	X	X	X				X	5
VI Alta Semita		X	X	X	X				X	5
VII Via Lata		X	X	X		X			X	5
VIII Forum Romanum	X	X	X		X				X	5
IX Circus Flaminius	X	X	X			X			X	5
X Palatium			X		X			X	X	4
XI Circus Maximus	X								X	2
XII Piscina Publica	X	X			X				X	4
XIII Aventinus	X							X	X	3
XIV Transtiberim	X	X	X			X	X	X	X	7
Total (# of Regions)	7	10	10	4	7	3	1	4	14	

My study is not the first to map some of Frontinus' regional aqueduct distribution data, but it is the first to do so for the Claudian period. Carlos Noreña, in

[59] This table is based on Evans 1994, Fig. 15.

his article on the water supply and residential topography of Rome in the Augustan period (27 BCE – 14 CE), endeavored to map the regions receiving the most public access water in the period following Augustus' major overhaul of the system from 11 to 9 BCE.[60] There were seven aqueducts in service at this time, the Aqua Appia, Anio Vetus, Tepula, Marcia, Julia, Virgo, and Alsietina. Frontinus wrote his treatise over a century after the Augustan improvements, so Noreña had to argue for the applicability of this data to the Augustan period. The imperial *commentarii* were a source Frontinus says he consulted for information like water supply measurements and the number of *lacus*, public basins served by each aqueduct (*Aq*. 64).[61] Noreña suggests that some of the data was collected in the Augustan period and never subsequently updated.[62] He thus downplays the overhaul of the system under Claudius.

Noreña's claim is based on an argument from silence. Frontinus states that he could not locate measurements for the Aqua Alsietina, completed in 2 BCE, in the imperial *commentarii*. Noreña infers that no one bothered in the Claudian period to update the records or to retake measurements for old aqueducts. I think a more plausible explanation for the lack of information on the Aqua Alsietina was both the

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[60] The dates for the overhaul of the water supply system under Augustus are inferred from the mention in Frontinus of six senatus consulta dating to 11 BCE (*Aq*. 100-1, 104, 106, 108, 125, 127) and a Lex Quinaria in 9 BCE (*Aq*. 129). See Noreña 2006, 96.
[61] See Peachin 2004, Appendix 6 for all references in Frontinus to the imperial *commentarii*.
[62] Noreña 2006, 95.

non-potable quality of the water and its original function to supply the Naumachia of Augustus, a spectacle lake used to stage mock naval battles.[63] Whether or not the water was of a quality for human consumption was of no consequence for an aqueduct intended to fill a massive stage of water. Frontinus even questions Augustus' reason for bringing such unwholesome water into the city, pointing out that the water was not delivered for use by the people (*Aq*. 1.11). The absence of data for the Aqua Alsietina in the official records may be due more to the specialized nature of the aqueduct than proof that the water supply improvements under Claudius were not an "overhaul" of the system.[64]

Noreña charts out the distribution patterns of the Aqua Appia, Anio Vetus, and Marcia because they supplied the greatest number of *lacus*, public basins, according to Frontinus.[65] He writes "other things being equal, and barring any evidence to the contrary, greater concentrations of service by these three lines imply greater concentrations of public basins."[66] One problem with excluding some aqueducts from a study of regional distribution is that some aqueducts, like the Aqua Virgo, served significantly fewer regions, so the total number of public basins may be lower as a result

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[63] *LTUR* 3.336, s.v. "Naumachia Augusti," (A. M. Liberati); Richardson 1992, 265.
[64] See Taylor 2000, 169-96 for a comprehensive look at the evidence for the Aqua Alsietina.
[65] Noreña 2006, 96-97.
[66] Noreña 2006, 97.

of the smaller service area.[67] We simply do not have enough evidence for the precise area and demography contained within each region. In order to obtain a more holistic picture, when mapping regional distribution of water supply under Claudius, I have not excluded any of the aqueducts.

I used the Mapping Augustan Rome map as a base for my water distribution visualizations for 41, 45, and 54.[68] Most maps of the Augustan regions use the Aurelian Wall as an outer border, although the wall was not built until the last quarter of the 3rd century, long after the reign of Claudius.[69] In my maps, I have used the regions defined by Filippo Coarelli,[70] but I do not define an outer border for the regions as they remain unknown and may have shifted over time. In addition to the regional supply data, I have incorporated known natural springs, cisterns, *castella*, *nymphaea*, *fistulae*, and inscriptions pertinent to the water supply into the maps.[71] The courses of the aqueducts and the drainage channels are marked. Distinctions between above ground and below

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[67] If we add the Aqua Virgo to Noreña's distribution map, Regions 9 and 14, the Campus Martius and Transtiberim respectively, received water from all four of the aqueducts serving the most public basins. Region 8, the Capitoline hill, and Region 7, the other half of the Campus Martius, received water from three of those aqueducts. This modification bolsters Noreña's argument. If a correlation existed between access to water and residential topography, Noreña concludes that the Campus Martius and Transtiberim were home to a large part of the population in the Augustan period.

[68] I used the Digital Augustan Rome map with the permission of David Gilman Romano. See http://digitalaugustanrome.org and Haselberger et al. 2002 for more information on the Mapping Augustan Rome project.

[69] *LTUR* 3.290-99, s.v. "Muri Aureliani," (G. Pisani Sartorio).

[70] Coarelli 2008, 7.

[71] Data from the known springs, fountains, and nymphaea of the Claudian period was drawn from the University of Virginia's Waters of Rome Project (http://www3.iath.virginia.edu/waters/). For *fistulae*, see De Kleijn 2002, 37-45. Inscriptions were compiled and documented by the author.

ground channels are made to show what would have been visible to someone walking through the ancient city. It is important to remember how much information is lost in the archaeological, epigraphic, and literary records, so all conclusions drawn based on these visualizations are contingent on the extant evidence being representative.

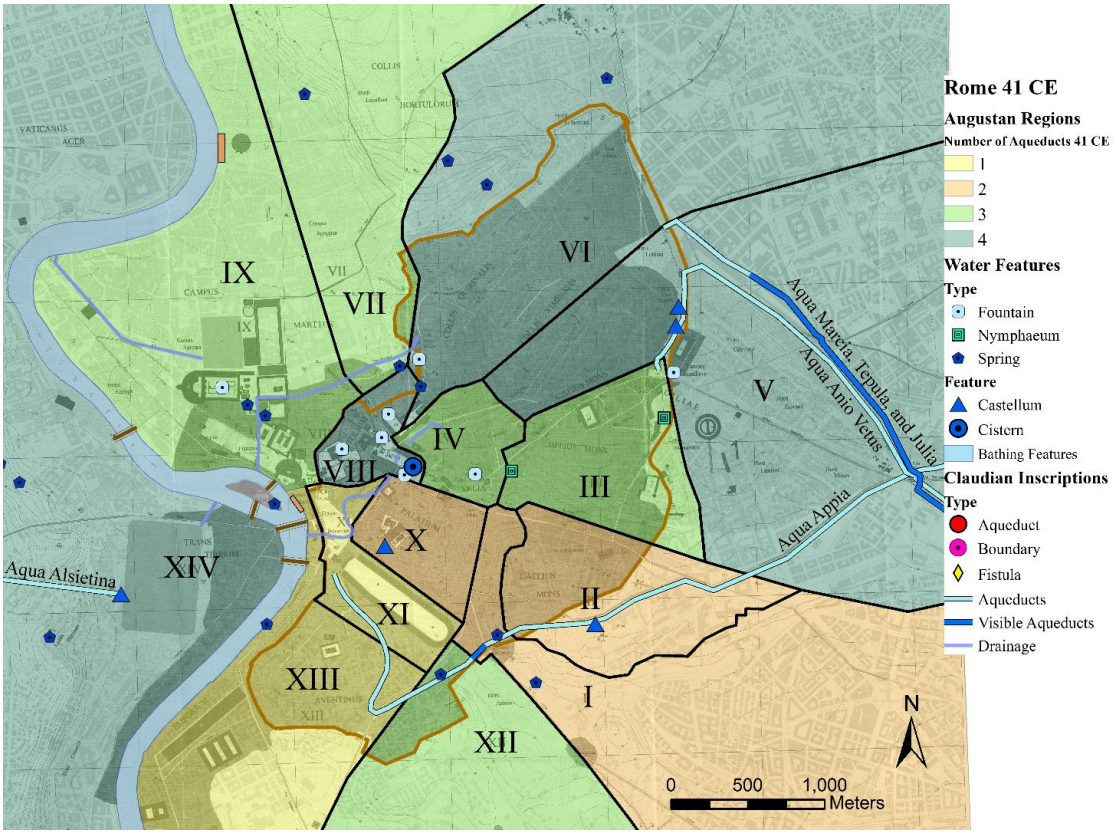

Figure 21: Map of water supply in 41.

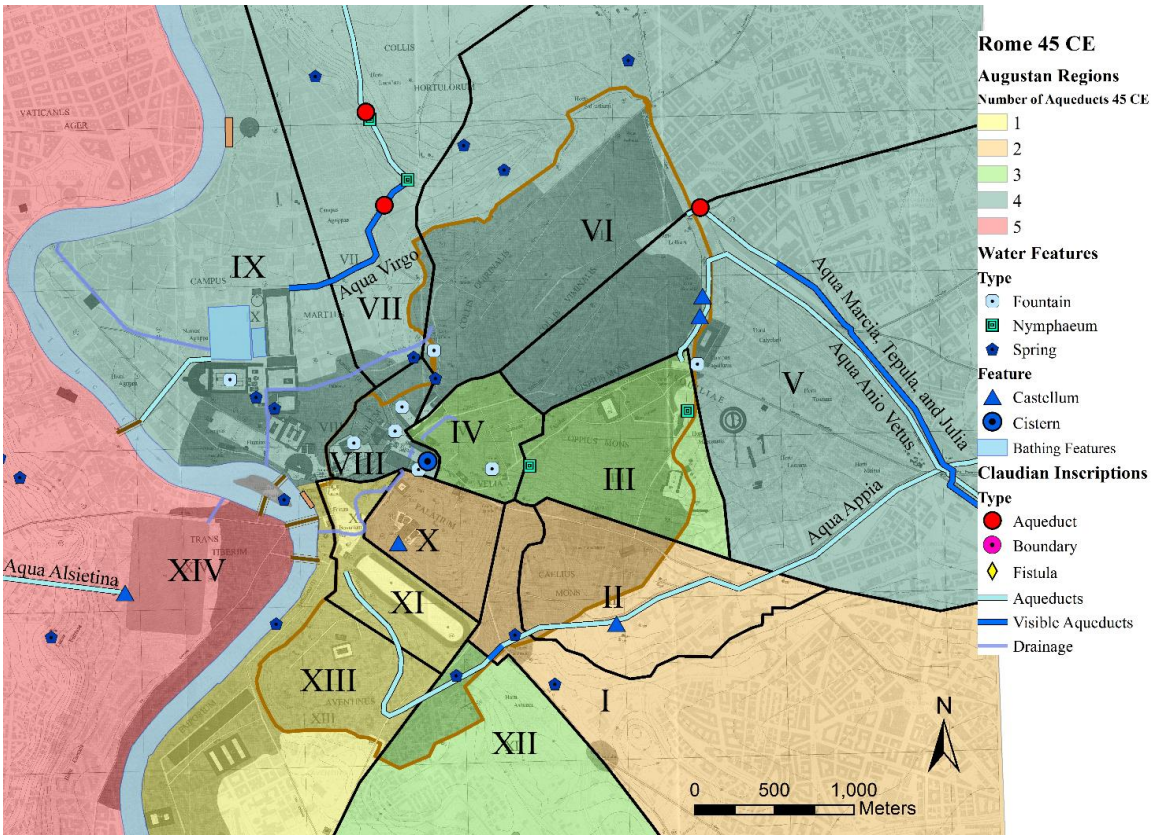

Figure 22: Map of water supply in 45.

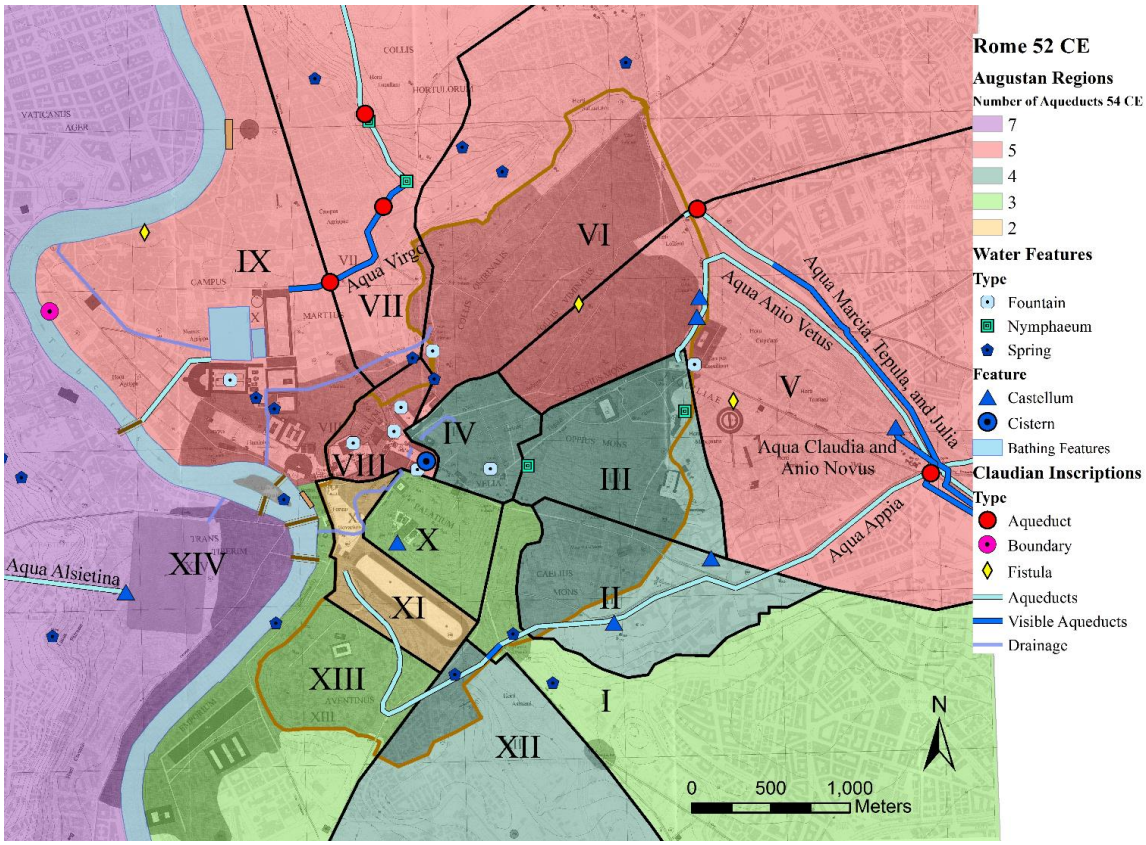

Figure 23: Map of water supply in 52.

These visualizations highlight the regions with the greatest amount of change over time in aqueduct supply during Claudius' reign—particularly Regions 7 (Via Lata), 9 (Circus Flaminius), and 14 (Transtiberim). In 41 Region 9 in the Campus Martius received water from three aqueducts; by 45, it received water from four; and by 52, from five. Region 14, Transtiberim, the only region on the western bank of the Tiber river, received water from four aqueducts in 41, five by 45, and seven by 52. Removing the

non-potable water of the Aqua Alsietina from the totals gives three aqueducts in 41, four in 45, and six in 52.

Upon the completion of aqueduct building and repair in Claudius' reign, only two of the city's nine aqueducts did not supply Transtiberim. Region 14 may have been geographically separated from the monumental center of Rome, but it became an increasingly integral part of the city's economic growth from the Augustan period onwards. Coarelli describes the Transtiberim as a "working-class neighborhood," based on inscriptional and archaeological evidence for such things as brick making, port structures, and mills.[72] The need to improve the water supply in the Campus Martius and Transtiberium may reflect the growth and density of the residential population and commercial activity in these areas. In Chapter 4, I discuss Claudius' construction of the Via Portuensis and its potential influence on Transtiberim.

The Campus Martius and Transtiberim also happened to be in the lowest lying land of the city, directly in the flood plain of the Tiber river. As Gregory Aldrete has shown in his book on the floods of the Tiber in ancient Rome, these areas were flood prone, making this land less desirable and where the poorer residents of Rome likely lived.[73] Figure 24 is a digital elevation model (DEM) of the city created in ArcScene by

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[72] Coarelli 2008, 336. See *LTUR* 5.77-83, s.v. "Transtiberim," (M. Maischberger), and Palmer 1981 for more information on the region.
[73] Aldrete 2007, 113.

interpolating the contour data from the Mapping Augustan Rome project.[74] The Mapping Augustan Rome elevation data captures the topography of Rome around 14, which is more representative of the landscape of Claudius' reign than modern elevation data.[75] The lower-lying parts of the city were between five and 10 masl without flooding. It also shows the conditions of a typical flood in Rome, a rise to 10 meters above sea level (masl), created using GIS watershed analysis and flood plain modeling.[76] The Campus Martius and Transtiberim were routinely inundated by the Tiber's waters.[77]

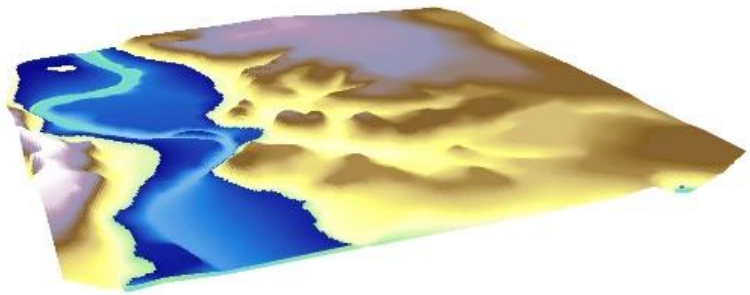

Figure 24: Digital elevation model (DEM) of Rome under the conditions of a typical flood (10 masl).

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[74] The Mapping Augustan Rome contour data is freely available at http://digitalaugustanrome.org.
[75] Corazza and Marra 1995, tav. 13 provides a detailed map of the amount of natural and man-made fill that has accumulated in Rome since the ancient period.
[76] Aldrete 2007, 46 describes a rise to 10 meters above sea level as a minor and most typical flood.
[77] Aldrete 2007, 47.

Just as clean water is essential for any population, too much water in the form of flooding damages housing, destroys grain and food supplies, and spreads diseases.[78] According to various sources, flooding was such a prominent threat in Rome that Julius Caesar developed plans to combat the problem by diverting the Tiber, but his proposals did not move beyond the planning stages (Cic. *Att*. 13.33.4; Suet. *Caes*. 44; Plut. *Caes*. 58).[79] The inscription from Portus, discussed in Chapter 2 above, shows that Claudius also hoped to reduce the risk of inundations in Rome by digging channels from the Tiber to the sea (*CIL* 14.85 = Thylander B310). Modern hydrology demonstrates that these channels did nothing to decrease flooding in the city, as we saw in the previous chapter.[80] Nonetheless, Claudius' attempt to solve the flooding problem in Rome exemplifies his attention to help protect the population living in close quarters in the flood plain.

Unfortunately, we have little to no archaeological evidence for the housing of the non-elite population in Rome, especially during the Claudian period.[81] The sturdiest and thus more expensive building materials were not used to build apartment buildings for the lower strata of society. For a city prone to fires and floods, its less expensive

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[78] Aldrete 2007, 232-39.
[79] Aldrete 2007, 181-92.
[80] Aldrete 2007, 184-85.
[81] Priester 2002, 235-77 catalogues all of the archaeological, epigraphic, and literary sources then known for multi-level buildings with residential units and *insulae* in the city of Rome. The earliest archaeological evidence dates to the early second century CE.

wooden and/or mudbrick constructions simply would neither hold up indefinitely nor survive in the archaeological record. The number of building regulations mentioned in the literary sources, like Augustus limiting the height of new buildings on city streets to 70 feet (Strabo 5.3.7; Hor. *Ep*. 1.1.100), indicate that building owners would often use shoddy and dangerous construction techniques to turn a better profit.[82] In his argument for a densely populated Campus Martius, usually considered as a monumental area, Noreña argues that apartment buildings could have populated the northern and western parts of the Campus Martius, along the banks of the Tiber river.[83] A *fistula* of Claudius, seen on the map in figure 10, was found *in situ* in the northern Campus Martius on the bank of the Tiber. What exact purpose the pipe served can only be speculated, but there was some need to supply water to the northern bank of the Campus Martius. We have evidence of apartment buildings in the Campus Martius following Hadrian's raising of ground level by around two meters.[84] Perhaps there had already been some residential build up in these spots prior to the Hadrianic period.

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[82] Robinson 1992, 34-38 details the various building regulations mentioned in the ancient sources.
[83] Noreña 2006, 101.
[84] Priester 2002, 235-36. See Boatwright 1987, 64-71 for the evidence for Hadrian's raising of the Campus Martius. Rakob 1987, 698, 709-710 argues that raising the level of the Campus Martius then prepared the land in the floodplain for residential building. Just because the land was not ideal for building did not mean that there were no attempts to build housing in the Campus Martius prior to the second century CE.

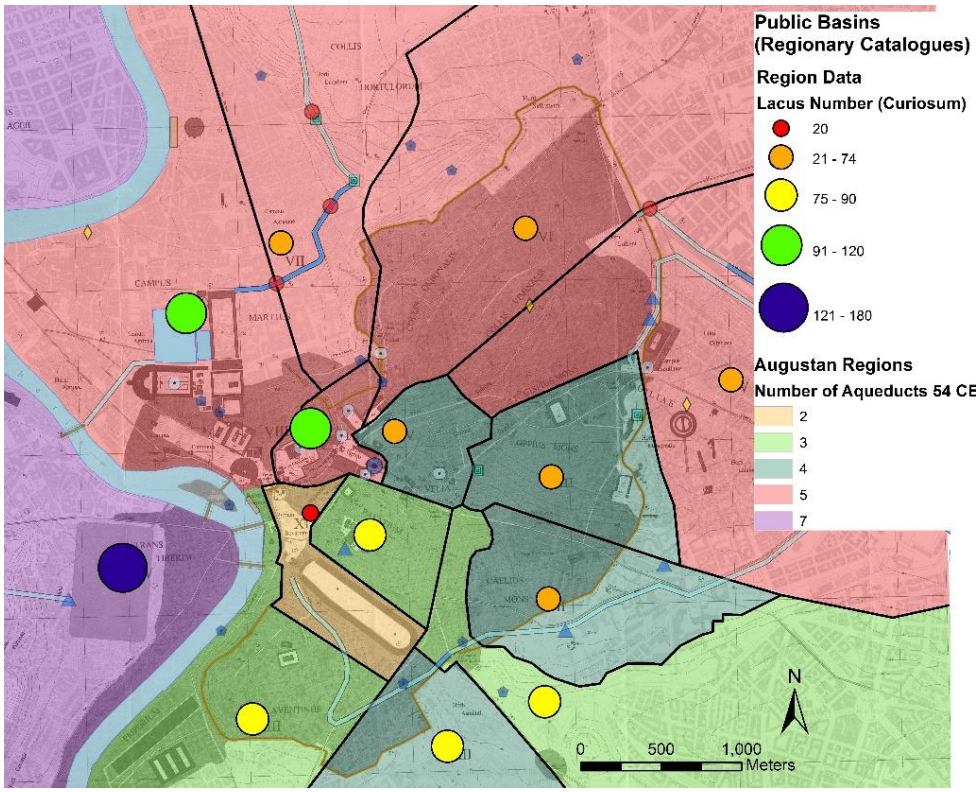

Figure 25: Map of the Aqueduct distribution by region (54) with the relative density of public basins per region (4th century).

Though much later, the fourth-century Regionary Catalogues record the number of public basins (*lacus*) in each region. Overlaying the public basin density on the map of aqueduct density per region by the end of the Claudian period shows that even in the fourth century, the areas with the most public access to water were the Campus Martius

and the Transtiberim (Fig. 25).[85] We may be able to postulate a certain amount of continuity in the urban fabric of Rome from the first-century onwards because, despite numerous fires and floods, the general topography of the city did not change drastically.

Another major point brought to light by mapping the regional distribution was the importance of the Aqua Virgo repair during Claudius' reign even though, as we have seen, this Claudian project is overshadowed in the literary sources by the Aqua Claudia and Anio Novus. Compared to the fourteen regions supplied by the Aqua Claudia and Anio Novus, the Aqua Virgo seems but a small piece of a much larger water supply system, serving only three regions (Fig. 26). However, the aqueduct not only served three of the low-lying areas of the city but, as we will see, it primarily provided water for public use. The construction of Caligula's amphitheater and subsequent interruption of the Virgo's water supply to the Campus Martius likely highlighted the need to assure redundancies in the water supply network.[86] I would argue that the disturbance of the Aqua Virgo by Caligula served as the catalyst for the initial construction of the Aqua Claudia in 38. Once the Aqua Claudia and Anio Novus were completed, all fourteen regions of Rome would potentially have enough water supply even in the event of any one aqueduct becoming disrupted.

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[85] I used the data from the Curiosum in the Regionary Catalogue. Though there are slight differences in the *lacus* totals, they do not change the fact that Regions nine and fourteen had the most public basins.
[86] Platner and Ashby 1929; Richardson 1992, 16.

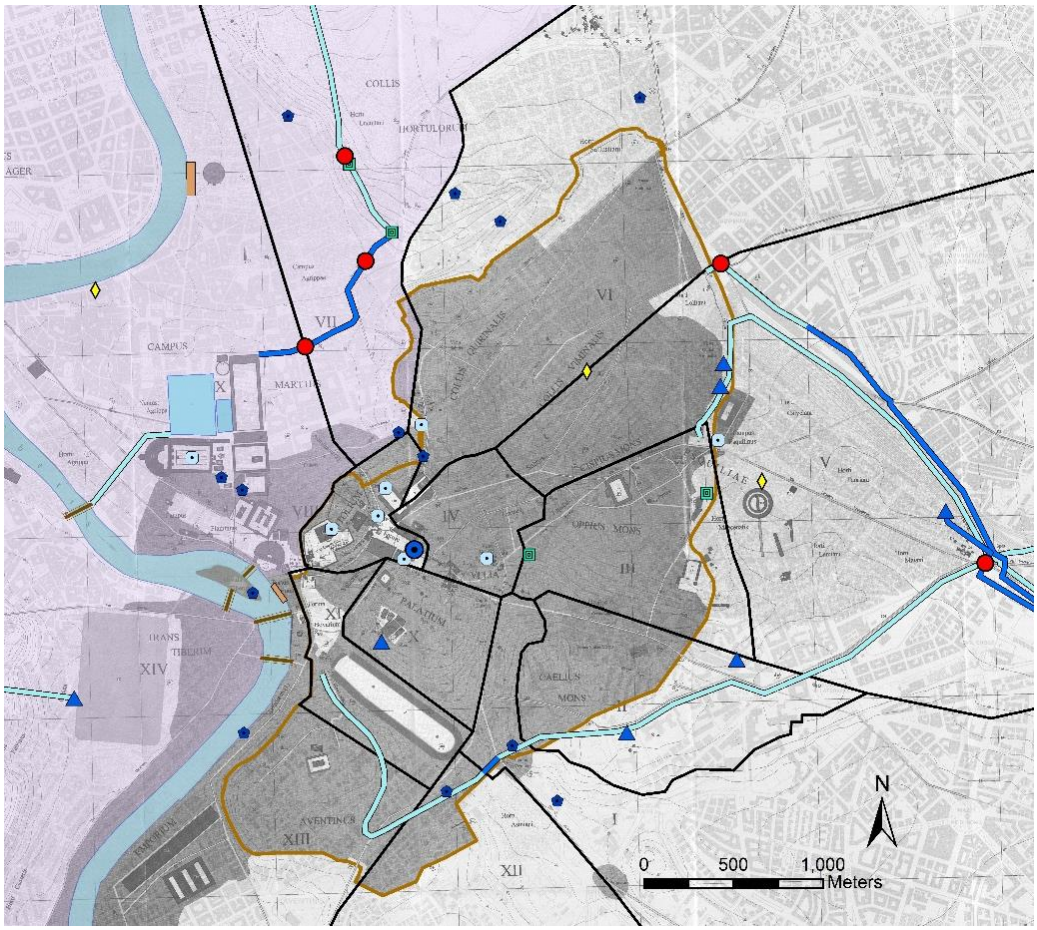

Figure 26: Map of Rome's water supply system in 52 with the three regions served by the Aqua Virgo marked in purple.

The Aqua Virgo supplied the needs of the Campus Martius and furnished water to Transtiberim. Both Robert Lloyd and Harry Evans argue that the Aqua Virgo provided the first extensive distribution to the district across the Tiber. Though the Campus Martius (Regions 7 and 9) was partially supplied by the Aqua Appia, the Anio Vetus, and the Marcia, the quantities reaching these areas must have been smaller compared to what went to the regions, like the Esquiline, closer to the terminus points of

the above-ground aqueducts.[87] As seen in figures 7, 8, and 9, nearly all of the aqueducts enter and terminate in the eastern part of the city. According to Frontinus, these aqueducts traveling through the Esquiline region saw a lot of illegal siphoning, especially for all of the *horti* in the area (Frontin. *Aq*. 27, 114).[88] The Aqua Virgo's source is also east of the city, but its course was designed to skirt to the north and take a sharp turn south into the Campus Martius. Similarly, for Transtiberim, only small amounts of water in the Appia, Anio Vetus, and Marcia would have traveled all the way across the Pons Aemilius to Transtiberim. Four aqueducts served the region in 41, but the Alsietina, as we have seen, was undrinkable (Frontin. *Aq*. 1.11).[89] The Aqua Virgo provided a better entry point into Transtiberim, the Pons Agrippae. It crossed the Tiber further upstream than the Pons Aemilius, permitting more wide-spread dispersal throughout Region 14.[90]

This evidence highlights how important the Aqua Virgo was to these regions and their inhabitants. Caligula may have underestimated the importance of this one aqueduct when he destroyed part of it in the construction of an amphitheater, cutting off supply. Around the same time, construction began on the Aqua Claudia and Anio Novus, which would serve all fourteen regions of the city (Frontin. *Aq*. 86). A need for

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[87] Evans 1994, 106-7; Lloyd 1979, 201.
[88] Michel 2015, 97.
[89] See above, p. 134-35.
[90] Lloyd 1979, 201.

redundancies in the water supply was the primary reason for Caligula starting work on the one of the two aqueducts that would eventually supply nearly half the city's water. When Claudius came to power, he did not bother completing Caligula's amphitheater in the Campus Martius, but instead destroyed its foundations and focused on getting the arches of the Aqua Virgo rebuilt.

Claudius made both a practical and visual statement by leveling an entertainment venue, restoring the largest source of water to the low-lying regions, including water for the massive public bathing complex of the baths of Agrippa, and commemorating the action with a monumental arch bearing an identical inscription on both sides.[91] As we see below, some additional data from Frontinus on the water supply can further confirm just how crucial the aqueduct projects completed under Claudius were to supplying the people of Rome.

3.5 Improvements in Water Quantity Reaching Rome under Claudius

In addition to indicating regional distribution, Frontinus reports numbers for the amount of water distributed by each aqueduct. Several have pointed out that Frontinus' numbers for the total volume of water flowing into the city are problematic because of a flaw in his unit of measurement, the *quinaria*. A *quinaria* seems to be equivalent to the

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[91] For more details on the Baths of Agrippa, see *LTUR* 5.40-42, s.v. "Thermae Agrippae," (G. Ghini) and Richardson 1992, 386-87.

diameter of the smallest Roman pipe (5 *quadrantes* or 1.25 digits).[92] Thus, a *quinaria* measures only capacity and does not account for the changes in the velocity (speed) of the water flowing through the pipes. But this problem was understood by Frontinus because he does mention his attempts to take measurements at points where the velocity of the water was similar to his other points of measure (*Aq*. 73). Several scholars have endeavored to convert Frontinus' *quinariae* into a modern measurement of water supply, volume per second (m^3/second).[93] Blackman was the first to incorporate changes in channel shape and slope into a calculation of the value of one *quinaria* for what he deemed the "four great aqueducts of Rome," the Anio Vetus, Marcia, Claudia, and Anio Novus.[94] Blackman's analysis was based on the most detailed data set, and resulted in *quinariae* values comparable to the numbers reported in Frontinus.[95] The Table 3 below compares the calculated value for 1 *quinaria* from Blackman's hydraulic calculations with Frontinus' data.

Table 3: Flow rate calculations by aqueduct.

Aqueduct	Frontinus	Blackman
Anio Vetus	2.11 m^3/s	1.2 m^3/s
Marcia	2.25 m^3/s	1.1 m^3/s
Claudia	2.21 m^3/s	2.21 m^3/s

[92] Noreña 2006, 92.
[93] See Keenan Jones et al. 2015, Fig. 2 for a nice graphic showing the wide-ranging values for one quinaria calculated by different scholars using different methods.
[94] Blackman 1978.
[95] Keenan-Jones et al. 2015, 9; Blackman 1978, 68-69.

Anio Novus	2.27 m^3/s	2.0-2.3 m^3/s

Blackman's values for the Aqua Claudia and Anio Novus are nearly identical to Frontinus, but the Anio Vetus and Marcia fall short of Frontinus' values. This means that the Aqua Claudia and Anio Novus had an even larger impact compared to the other aqueducts, because one *quinaria* from the Aqua Claudia may have been nearly double the amount of one *quinaria* from the Marcia.

A recent field study of the Aqua Anio Novus by Duncan Keenan-Jones, David Motta, and others has improved upon Blackman's calculations by analyzing the stratigraphy of the channel in different spots from Roma Vecchia, where the aqueduct emerges from underground and travels six kilometers to the Porta Maggiore in Rome.[96] This means that instead of having to assume the aqueduct channel was always filled to capacity, as Blackman does, they used the evidence of travertine deposits to calculate the actual height of the water in the channel.[97] Their calculations resulted in a flow rate measurement of 1.4±0.4 m^3/second for the Aqua Anio Novus, slightly lower than Blackman's 2.0-2.3 m^3/second.[98] Until Keenan-Jones and their team can conduct similar

[96] Keenan Jones et al 2015, 5-6.
[97] Blackman 1978, 55-57 recognizes that all of the flow rate calculations for the aqueducts are maximums because he had to assume the channel of the aqueduct was constantly filled, but not pressurized.
[98] Keenan-Jones et al. 2015, 8.

studies of the other Roman aqueducts, they recommend using Blackman's estimates and Frontinus' data as long as we acknowledge that their values are maximums.[99]

I fully recognize the problems associated with Frontinus' measurements, but my study is not using his figures for exact quantities nor does it require them. Instead, I turn to the measurements to show general trends. Putting the data in bar graphs and maps will illustrate these trends, allowing us to step away from the exact numbers and some of their problems. The first graph, figure 27, shows the total number of *quinariae* dispersed inside the city for 41, 45 and 52 with each bar divided up between imperial use, private use, and public use (Fig. 27). Take notice of the spike in public use when the Aqua Virgo is repaired in 45, and of how the total water supply more than doubles in 52 from its rates in 41 with the Virgo, Claudia, and Anio Novus all in commission. The next graph, figure 28, includes only data for the "public access water supply," divided up between *lacus*, *munera*, and *opera publica*. Similarly, the increase in public access water supply is significant with the repair of the Aqua Virgo, and more than double-fold with the completion of the Aqua Claudia and Anio Novus.

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[99] Kennan-Jones et al. 2015, 9.

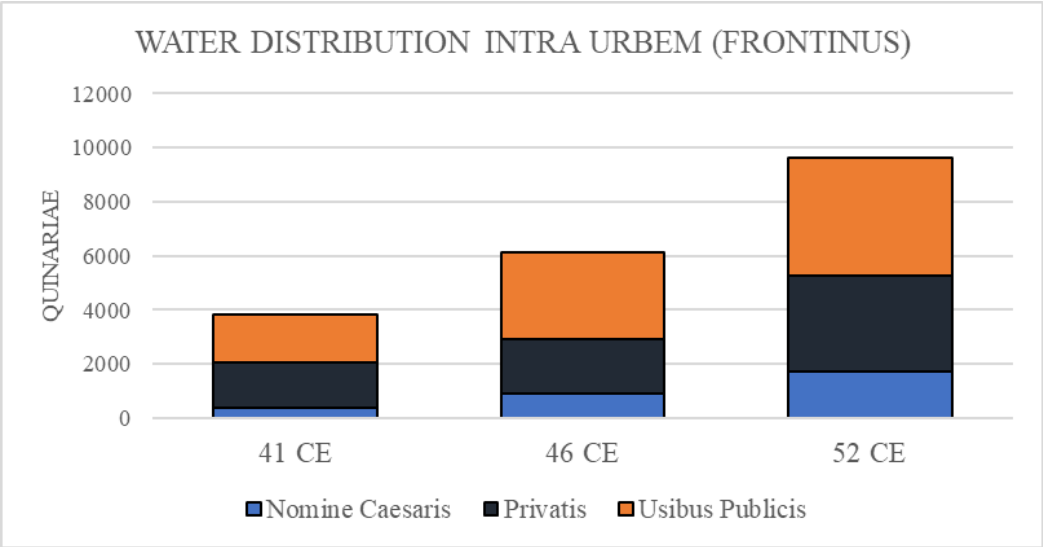

Figure 27: The changes over time in water distribution in the city under Claudius, divided between imperial use, private use, and public use.

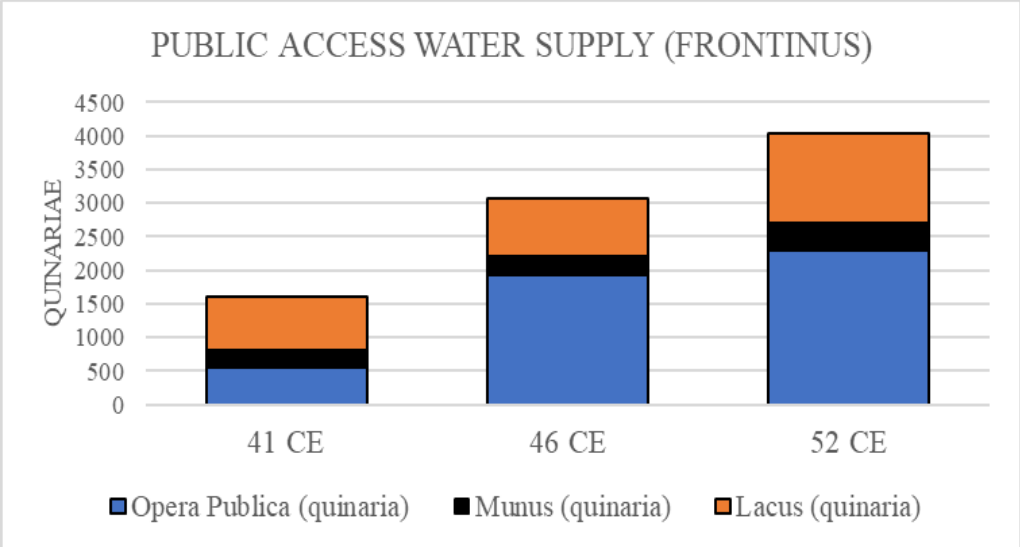

Figure 28: The changes over time in public access water supply in the city under Claudius, divided between public works, fountains, and basins.

We can also consider this data by aqueduct (Fig. 29). The Aqua Julia, Aqua Tepula, and Aqua Marcia ran parallel to one another, so I have combined their total *quinaria*. Even those three combined, according to Frontinus' numbers, did not surpass the Aqua Virgo in total water supplied into the city. The Aqua Claudia and Anio Novus, also combined together, clearly provided the most water to the city. But then in terms of public access water, the Aqua Virgo provided the most *quinariae* (Fig. 30).

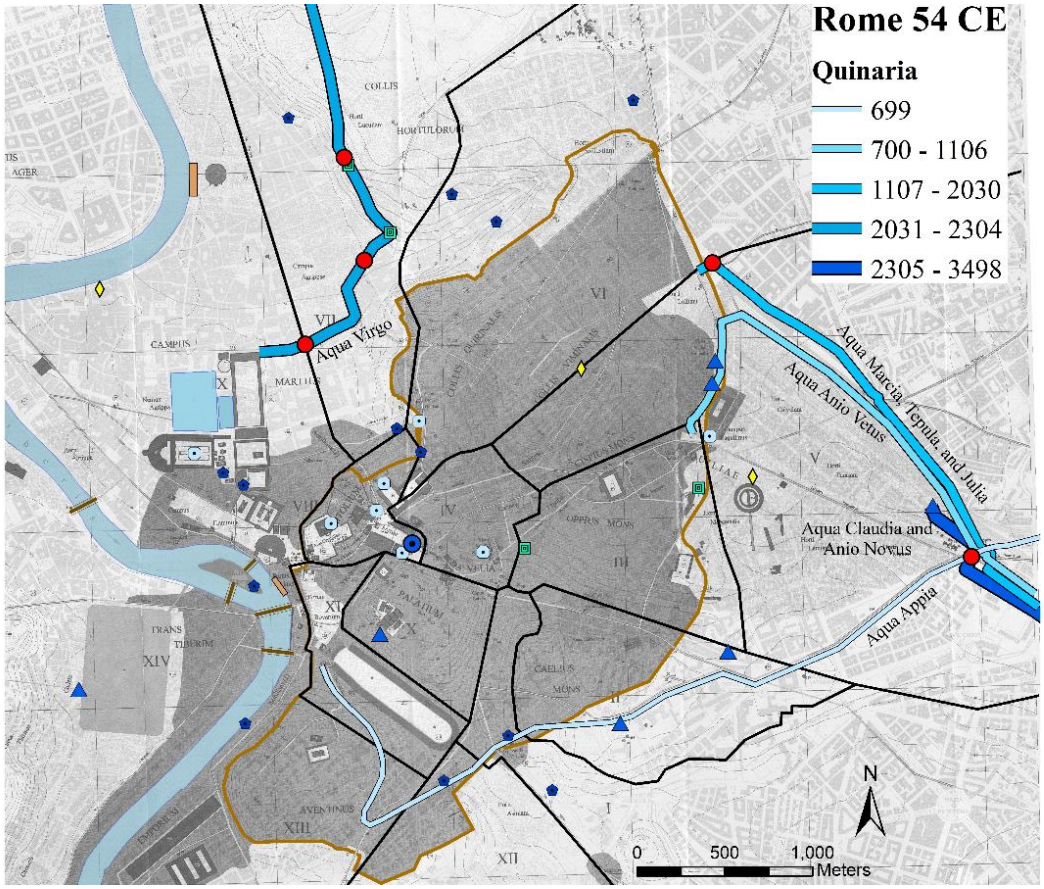

Figure 29: Total number of *quinariae* supplied *intra urbem* by each aqueduct according to Frontinus.

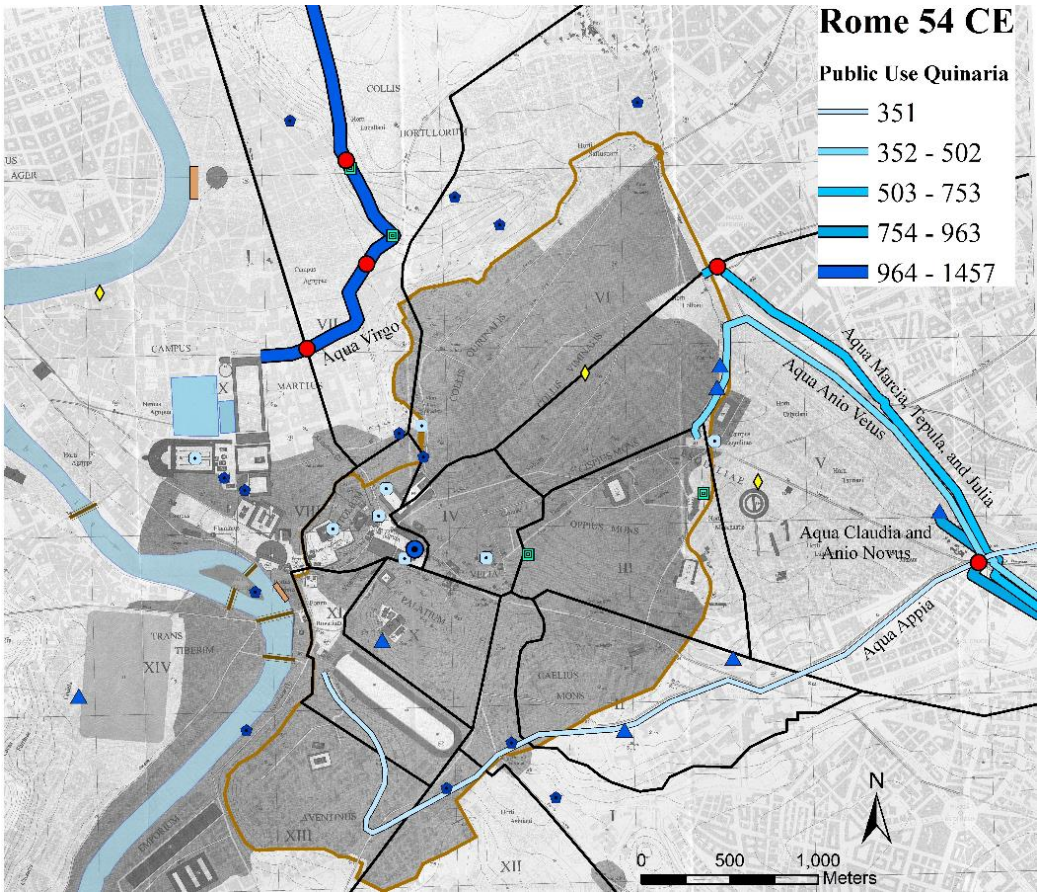

Figure 30: Total number of *quinariae* supplied *intra urbem* for public access purposes (*lacus*, *munera*, and *opera publica*).

3.6 Conclusion

Water is an essential resource for every human population and its supply and control were necessary to sustain Rome's large urban population (Vitr. *De Arch.* 8.1.1: [*Aqua*] *est enim maxime necessaria et ad vitam et ad delectiones et ad usum cotidianum*). Wells, springs, and rain-collecting cisterns supplied sufficient freshwater to the population of

Rome in its legendary early history, when the population was around 20,000.[100] It was not until 312 BCE, in the censorship of Appius Claudius and C. Plautius Venox, that the demand for water outpaced natural supply, necessitating plans for the first aqueduct into the city, the Aqua Appia.[101] The conveyance of freshwater into Rome from areas outside the city is considered among the greatest feats of ancient engineering. As Rome grew to some 800,000 during the reign of Augustus, the water supply had to be increased. Early in Claudius' reign, with the abandonment of construction on Caligula's amphitheater and the immediate repair of the Aqua Virgo, a message was sent to the people that their water supply was an imperial priority. Aqueduct *cippi* bearing Claudius' name were installed along the course of the Aqua Virgo, above-ground aqueduct courses were monumentalized in the Claudian rusticated style, and three aqueduct arches were marked with monumental inscriptions. Later emperors, especially those of the Flavian dynasty, followed Claudius' lead and sought to send a similar message through rebuilding inscriptions on aqueducts.

The water supply of Rome was truly overhauled during Claudius' reign. Not only did the repairs of the Aqua Virgo and completion of the Aqua Claudia and Aqua Anio Novus bring a significant amount of public access water into the city, but also

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[100] Colini 1941, 71-99.
[101] Van Deman 1934, 23-28; Ashby 1935, 49-54; Richardson 1992, 15-16; Evans 1993, 65-74; *LTUR* 1.61-62, s.v. "Aqua Appia," (A. Mucci); Aicher 1995, 34-35.

Frontinus (*Aq.* 13) informs us that the Aqua Claudia was second only to the Aqua Marcia in water quality, meaning that Claudius' new aqueduct provided top quality drinking water to all fourteen regions of the city. Aqueduct maintenance was also a primary concern. Claudius supposedly instituted the position of the *procurator aquarum*, an officer in charge of the aqueducts after the Aqua Claudia and Aqua Anio Novus were completed in 52 CE (Frontin. *Aq*. 105). Among other things, this commissioner oversaw stamping water valves with their correct measurements and of approving private taps into the public water supply (*Aq*. 105).[102] Aqueduct maintenance was of the utmost importance because, as Keenan-Jones et al. determined when studying the travertine deposits in the Aqua Anio Novus, mineral deposits could reduce water discharge by up to 25%.[103]

Mapping the regional distribution of aqueducts shows that Claudius improved the potable water supply in areas where poorer populations of Rome likely lived, namely in the flood plain of the Tiber river. These areas were not thought to be densely inhabited until the second century, but I argue that the emphasis on infrastructure improvements in the Campus Martius and Transtiberim under Claudius suggests dense inhabitation much earlier at least in the Campus Martius. No new grandiose temples

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[102] Robinson 1992, 100-1.
[103] Keenan-Jones 2015, 9.

were built under Claudius, but repairing and rebuilding aqueducts assured that all regions of the city had water even if one or more of the aqueducts were disrupted.

4. Organizing the City: Claudius and the Boundaries and Roads of Rome

4.1 Introduction

In the preceding chapter, we saw that providing potable water, especially in low-lying areas of the city, was an imperial priority during Claudius' reign. This water served several other purposes in addition to drinking needs, such as supplying public latrines and baths, and extinguishing fires. Early in Claudius' reign, a large and almost uncontrollable fire broke out in a neighborhood of the southern Campus Martius called the Aemiliana (see on map in Fig. 31). Suetonius tells us that Claudius brought his own soldiers and slaves to help the effort to put out the fire:

> *Cum Aemiliana pertinacius arderent, in diribitorio duabus noctibus mansit ac deficiente militum ac familiarum turba auxilio plebem per magistratus ex omnibus vicis convocavit ac positis ante se cum pecunia fiscis ad subveniendum hortatus, repraesentans pro opera dignam cuique mercedem.*
>
> On the occasion of a stubborn fire in the Aemiliana [Claudius] remained in the Diribitorium for two nights, and when a body of soldiers and of his own slaves could not give sufficient help, he summoned the people from all neighborhoods through the magistrates, and placing bags full of money before them, urged them to the rescue, paying each man on the spot a suitable reward for his services. (*Claud.* 28.1)

This story offers some insight into the priorities and the overall organization of the city at the time. Claudius was so concerned about the conflagration in this neighborhood that he slept in the Diribitorium, located at the southern end of the Saepta Julia in the

Campus Martius, for two nights, to help oversee the firefighting efforts.[1] There is no other instance of an emperor sleeping outside the palace in a much more open space. However, some structure near the Diribitorium must have had accommodations for the triumphing generals to sleep and change in as Josephus mentions Vespasian and Titus doing (*BJ* 7.123). The fact that people could be mustered from throughout the city via a network of magistrates, possibly the *vicomagistri*, speaks to the organization of Rome at the time and the efforts to keep people safe all the way down to the neighborhood level.[2]

The purpose of this chapter is to look at the visual and practical changes made to the organization and movement in the city during Claudius' rule. Even the most symbolic and traditional of boundaries, the *pomerium*, saw the creation of a monumental marking system under Claudius. Organizing the boundaries into and out of the city facilitated movement of goods and people. I argue not only that the boundary-defining and road-building initiatives, largely undertaken during Claudius' censorship in 47-48, made visual and symbolic impacts on the city in unique ways, but that the associated duties of adding new roads and demarcating imperial land boundaries were critical to the urban development and maintenance in the city. Claudius even had statuary cluttering public spaces removed and forbid citizens from erecting a statue without the

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[1] For the Diribitorium, see *LTUR* 2.14-15, s.v. "Diribitorium," (M. Torelli) and Richardson 1992, 109-110.
[2] The *vicomagistri* were officials in charge of individual *vici*, neighborhoods. Robinson 1992, 11-13 clearly lays out the role of the *vicomagistri* at different times in Roman history. Lott 2004, 89-98, provides a comprehensive discussion of *vicomagistri* during the Augustan period.

permission of the senate, unless they build or repair a public work (Dio 60.15.2-3). Mapping the locations of these organizational efforts further substantiates my argument that areas near the banks of the Tiber were a priority for Claudius. Looking at this microscale of change within the city offers a new way of approaching seemingly simple building initiatives during an emperor's reign, and centers on the visual and practical impact upon the general populace.

4.2 Claudius the Censor: 47-48 CE

Most, but not all, of the boundary marking and road building initiatives from Claudius' reign coincide with his censorship in 47-48, but continued in the following years. Claudius served as censor along with Lucius Vitellius, reviving an office that had not been held since two "privati" had held it in 22 BCE.[3] A look at the historical background and responsibilities of the censors will demonstrate the long-standing connection between the office and city organization. According to Livy, in 443 BCE the office of the censors derived from a need to assist the consuls in some of their duties (Livy 4.8).[4] The census had not been taken in many years and the consuls were too busy overseeing Rome's expanding warfare to take on the task. The position was not originally imbued with the prestige that it came to have later in the Roman Republic,

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[3] Augustus technically held some of the powers of a censor through holding the tribuneship, but he never formally assumed the title.
[4] Suolahti 1963 is the fundamental modern work on the origins, powers, and status of the Roman censors.

when Cicero extolled the position and its duties of determining Roman families and properties, protecting the temples, roads, water supply, treasury, and taxes of the city, dividing the people into tribes, and guiding the moral behavior of the people (Cic. *Leg*. 3.3). The custom evolved of holding elections for two censors every five years.

When Claudius assumed the censorship in 47, 33 years had passed since the last tabulation of Rome's population in 14. Earlier in the principate of Augustus, the people of Rome had urged the new Princeps to become both dictator and censor to help alleviate devastation brought by flooding and famine (Dio 54.1). Fitting with Augustus' Republican image and desire to avoid the impression of seizing kingly power, like his adoptive father Julius Caesar, he turned down both positions.[5] Instead, he appointed Paulus Aemilius Lepidus and Lucius Munatius Plancus as censors (Suet. *Aug*. 37).[6] The census was conducted regularly under Augustus, as evidenced by the data presented in the *Res Gestae Divi Augusti*, but he never held the official title as censor (Aug. *RG* 8).[7] Claudius was, therefore, the first Princeps to assume the title of censor, marking a time in which the principate was consolidating. Future emperors, including the three

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[5] While Augustus turned down the office of censor, his the tribunician power he was granted included some of the powers associated with the censorship.
[6] For more on the Augustus' carefully crafted image, see for example: Zanker 1988, Favro 1996, and Levick 2010. Paulus Aemilius Lepidus and Lucius Munatius Plancus were both supporters of Augustus and had constructed major buildings in Rome during the civil war.
[7] The other two censuses after 22 BCE were undertaken in 8 BCE and 14 CE. Thus, the census was no longer being taken in five-year intervals.

Flavians, would each follow suit and hold this prestigious office. In fact, Domitian assumed the title of perpetual censor in 85, a seizure of power that no other emperor would take on afterwards.[8]

The political ramifications of Claudius' tenure as censor in 47-48 were significant.[9] The censor had the power to reassess and remove members of the Senate from their positions. The years just prior to 47 were marked with some political turbulence between Claudius and the aristocracy.[10] A conspiracy against the emperor was unveiled; it was led by Lucius Asinius Gallus and Titus Statilius Taurus Corvinus, one of the consuls in 45, and involved some of Claudius' freedmen (Dio 60.27). As a result, Lucius Asinius Gallus was exiled and Titus Statilius Taurus Corvinus was killed. This punishment sent a message to members of the senate who might contemplate similar actions, and Claudius followed it by publicly reevaluating, as censor, all senators' qualifications.[11] One of Claudius' acts as censor that aided in this reassessment included passing a law against giving loans to minors (Tac. *Ann*. 11.13.2). A typical reason for losing senatorial rank was due to a lack of money to qualify.[12] The censorship

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[8] See Buttrey 1975 for more on the numismatic evidence for Domitian's perpetual censorship.
[9] Momigliano 1934, 44 argues that Claudius' revival of the censorship was not so much out of antiquarian interests as it was about revaluating membership in the senate.
[10] Levick 1990, 99.
[11] While Claudius was reassessing the current members of the senate, he was also welcoming individuals into the senate from the provinces (Tac. *Ann*. 11.23-25.1).
[12] See Talbert 1984, 49-53 for a detailed account of senatorial property and expenses.

offered indirect and direct methods of eliminating certain senators from their positions, and was useful when members of the aristocracy plotted against the emperor's life.

The revival of the censorship may have also reflected the emperor's antiquarian interests and functioned as a celebration of his familial ties to Appius Claudius Caecus, who famously served as censor in 312 BCE.[13] Boundaries, building regulations, and road building were not the most glamorous public works projects, but they were essential to the organization and livelihood of the city and its residents. Claudius reconnected the office of censor to the emperor, reviving duties that were later emulated by the Flavians and beyond.

4.3 Boundaries

Many studies of Rome's topography spend little time on boundaries other than the Servian walls, the Aurelian walls, and the path of the *pomerium*. Without property boundaries and regulations, including those regulating riverbanks, private individuals could slowly take over public land needed to enable the movement of people and cargo into and out of the city. Regional territories enabled a useful organization for mobilizing groups like the *cohortes vigilarum* to fight Rome's many fires. In short, boundaries helped prevent the teeming city of Rome from falling into chaos. In this section, I

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[13] Fasolini 2006, 159-62 offers a comprehensive account of the origins of the Claudian *gens*. Humm 2005 is an extensive monograph on Appius Claudius Caecus. Ryan 1993 argues that the orthographic changes, namely adding three new letters to the Latin alphabet, made by Claudius were done in his capacity as censor.

analyze the different types of boundaries set up or confirmed under Claudius and consider their function, impact, and spatial context in the city of Rome.

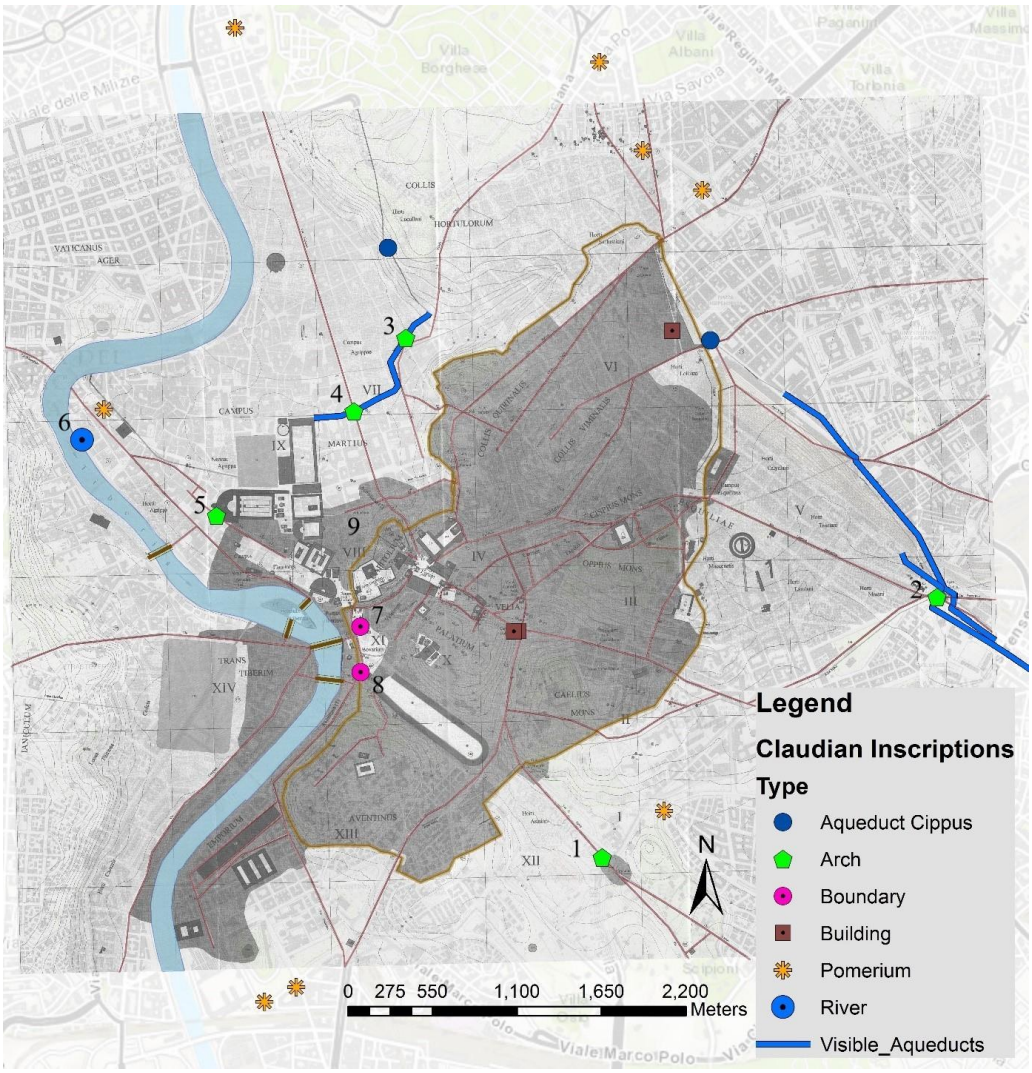

Figure 31: Claudian boundary marking projects. [14]

[14] The key for the map (Fig. 31) is as follows: (1) Arch of Drusus (Dio 51.18), (2) Porta Maggiore Arch, (3) Aqua Virgo Arch, (4) British Victory Arch, (5) Arch of Tiberius (Suet. *Claud*. 11.2), (6) Riverbank cippus (*CIL* 6.31545 = *ILS* 5926), (7) Volusii Saturnini cippus (*CIL* 6.40887), (8) cippus reclaiming public land (*CIL* 6.919 =

Figure 31 maps out Claudian inscriptions related to boundary marking.[15] In a section of Chapter 2 on the water supply, I argued that the smaller aqueduct *cippi* were phased out during Claudius' reign in favor of larger, more monumental arch inscriptions. The *cippus* form continued to be the preferred medium for property boundaries and riverbank boundaries, however, and was appropriated for use in *pomerium* stones, a new development of Claudius' reign. I begin with a brief overview of the long-standing traditions of land-boundary marking in Rome and then move to an analysis of the legal, archaeological, and epigraphic evidence on these boundaries before, during and after the Claudian period. By mapping the evidence in its spatial context, we can see that the proper allocation, use, and categorization of land, especially in areas in the floodplains of the Tiber, were priorities under Claudius. This work, less conspicuous in antiquity, was essential and was the foundation for the food distribution and water supply infrastructure initiatives discussed in the preceding chapters.

ILS 211), (9) the Aemiliana neighborhood. Discrepancies in the ancient sources point to two different locations for the Aemeliana, one in the southern Campus Martius and the other flanking the Tiber at the base of the Aventine hill. Since Suetonius (*Claud*. 28.1) indicates that Claudius stayed in the Diribitorium to be close to the fire, I think the southern Campus Martius is the more likely location of the Aemiliana district.

[15] I only include imperially issued inscriptions from the Claudian period not inscriptions put up by other individuals to honor Claudius. While outside the scope of this study, mapping the extant honorific inscriptions in relation to the imperially issued inscriptions could offer a fruitful path for additional research.

Boundary marking in Rome ties back to the city's mytho-historical past in the foundation story of Romulus and Remus. Both brothers were proclaimed king by their respective supporters, who turned to differing interpretations of an omen. Six birds appeared to Remus first, but twice the number of birds appeared to Romulus second. As one account goes, Remus was killed by Romulus after he mockingly leapt over the wall Romulus had built around the Palatine hill (Livy 1.7.1-3). Romulus killed Remus as an example and warning to anyone who dared to transgress the walls of Rome (Livy 1.7.2: *sic deinde, quicumque alius transiliet moenia mea*).[16] In Livy's account, not long after that event Romulus drove a plow around the city, marking the sacred boundary of the city that was later known as the *pomerium*. The *pomerium* will be discussed in more detail below, but this example conveys how Livy thought this boundary marking in the early history of Rome was significant.[17] One of Rome's most ancient gods, Terminus, the god of boundaries, was celebrated in an annual festival on February 23rd (Ov. *Fast*. 2.641-42).

Smaller-scale property boundaries, like those between two neighbors, were also significant in Rome's early history, as evidenced by the laws of the Twelve Tables dating to 451-450 BCE.[18] The Twelve Tables were not an entirely new legal code, but rather the

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[16] Ogilvie 1970, 54-55.
[17] See below for more on the pomerium.
[18] Crawford 1996, no. 40.

official collation and documentation of oral legislation already in effect. The laws were inscribed on bronze tablets and displayed prominently in the forum (Livy 3.57.10).[19] The inscription itself does not survive, but many of the laws were preserved in the *Codex Iustinianus* of the sixth century, or can be reconstructed from references in various earlier literary works, like Varro, Cicero, and Aulus Gellius.[20] The law's Table 7 primarily focuses on territory, including a requirement that a five-foot buffer zone exist between neighboring landowners (Table 7.1). With the prevalence of legislation on territory and property, we can infer that one of the state's primary functions in the fifth century BCE was settling boundary disputes between individuals. Inscriptional evidence from throughout Rome's territory and empire illustrates just how often people turned to state property boundary laws to settle arguments.[21] As we will see below, imperial officials often were called upon to reclaim public land or reaffirm the holdings of private landowners in Rome.

On a larger scale, regional and sacred boundaries were key to the symbolic and practical organization and administration of Rome. Augustus divided the city of Rome into fourteen regions and 265 wards in 7 BCE (Plin. *HN* 3.66; Suet. *Aug*. 30.1; Dio 55.8).[22]

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[19] Roman laws were commonly inscribed on bronze and displayed in public spaces in Rome and in cities throughout the empire. See Crawford 1996 for the text of the Twelve Tables and discussion.
[20] Conant 1928 provides all the references for the reconstruction of the Twelve Tables.
[21] Eliot 2002 collects and analyzes epigraphic evidence for property disputes in the Roman empire.
[22] Lott 2004, 26-27.

As the Regionary Catalogues confirm, these fourteen regions were used continuously to at least the 4th century. Claudius established similar regions and *vici* in Ostia and Puteoli, two of the major ports in Italy, and assigned *cohortes vigilum* to each region (Suet. *Claud*. 25.2).[23] Establishing regions in two major port cities indirectly impacted the city of Rome. Grain was not always immediately shipped into the city. Ostia and Portus had a large number of storage facilities for storing surplus crops, which needed to be protected from fire and environmental factors. Such administrative organization at the port protected much needed resources for the capital city. Boundaries between the fourteen regions in Rome were not marked in the urban landscape in antiquity, but they were at least well-known to the *cohortes vigilarum* and *vicomagistri* assigned to oversee them. The most symbolic boundary of Rome, the *pomerium*, was not only extended, but also marked by Claudius for the first time, with *cippi*.

4.3.1 Property Boundaries and Regulations

Some epigraphic evidence for the confirmation and confiscation of property survives from Claudius' reign. In size and material, like the aqueduct *cippi* discussed in Chapter 3, these land boundary stones were made up of an inscription on a rectangular slab of travertine. However, boundary stones used to mark territory were not always

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[23] See Camodeca 1977, 22-23 and Lott 2004, 174.

inscribed.[24] Plain, ordinary stones could also be used to mark the edges of a person's farm and/or property within a city. The earliest extant *cippi* issued by the state to affirm or reclaim public or private territory in Rome date to the Augustan period.[25] In all likelihood there were property boundary stones before the start of the Principate, but they did not have the specific epigraphic form and formula we will see below.[26] Furthermore, the formula on the stones asserts the princeps' restoration of property to the state from those who had usurped it illegally – one demonstration of his having restored civic order.

While the physical composition and size of property boundary stones remained relatively constant through the years, the Claudian inscriptions possess some distinct differences from those set up during the tenures of Augustus and Tiberius. Looking at the changes over time in boundary stones, like the aqueduct inscriptions from Chapter 3, we can see that there was a change in boundary marking and general epigraphic trends during Claudius' reign.

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[24] Plain stones classified by scholars as boundaries have been found in the archaeological record. In his account of the festival of the Terminalia in Book 2 of the *Fasti*, Ovid describes the god, Terminus as a stone or even a stump (6.641: *Termine, sive lapis, sive es defossus in agro | stipes, ab antiquis tu quoque numen habes*).
[25] Campbell 1996, 98 views these boundary stones as a sign of ancient urban surveying.
[26] Boundary marking was a common Etruscan phenomenon and probably influenced the Roman boundary stone form. We have some boundary stones with the Etruscan words TULAR RAŚNAL inscribed on a rectangular block of tufa (e.g. Gallo-Romeins Museum Tongeren Inv. Number HIII.EE), which translates to "boundary of the public" (Van der Meer 1977, 70).

Two nearly identical Augustan boundary stones have been recorded, one found at the intersection of Via S. Martino ai Monti and Via Giovanni Lanza on the Oppian hill and now lost (*CIL* 6.31572a), and the other of unknown provenience. I cite below the second stone:

[Imp(erator) C]aesar Augustus
ex privato in publicum
restituit
in partem dexteram recta
regione ad proxim(um) cippum
ped(es) CLXXXII
et in partem sinistram recta
regione ad proxim(um) cippum
ped(es) CLXXVIII

Imperator Caesar Augustus restored from private hands to the public, to the right side 182 feet to the next cippus, and to the left 178 feet to the next cippus. (*CIL* 6.1262 = *ILS* 5936)

The only difference between the two Augustan inscriptions is the distances in Roman feet to the next stone (*proximus cippus*) on the left and the right. Augustus' name is clearly stated in the primary position at the top of the inscription as the authority reaffirming public territory that had fallen into private hands. Providing the distance to the next stone is a common formula and can be seen in many Augustan *cippi*; it fits the uniformity that developed during his time in power.[27]

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[27] See for example, the aqueduct *cippi* (Ch. 3).

Sometime in the early Principate, a new board of officers, called the *curatores locorum publicorum iudicandorum*, the curators for adjudicating public space, was formed to handle public property boundary-related tasks.[28] A Tiberian land boundary stone from 22 records the names of the five curators of that year:[29]

T(itus) Quinticus Crispinus
Valerianus
C(aius) Calpetanus Statius Rufus
C(aius) Pontius Paelignus
C(aius Petronius Umbrinus
M(arcus) Crassus Frugi
curatores
locor(um) publicor(um)
iudicand(orum)
ex s(enatus) c(onsulto) causa cognita
ex privato in public(um) restituer(unt)

> Titus Quinticus Crispinus Valerianus, Gaius Calpetanus Statius Rufus, Gaius Pontius Paelignus, Gaius Petronius Umbrinus, Marcus Crassus Frugi, the curators for ajudicating public space, by decree of the senate, having examined the case, restored [this space] from private hands to the public. (*CIL* 6.1266 = *ILS* 5939)

The original location of this inscription is unknown, but Dessau believed that it may have been originally located near the Circus Maximus at the base of the Aventine Hill.[30]

A set of five *cippi* similarly from Tiberius' reign, dating to 24, bears the names of a different group of *curatores locorum publicorum iudicandorum*. These inscriptions were found in various spots on the eastern side of Rome, including near the Via Appia (*CIL*

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[28] Kolb 1993, 21-28; Robinson 1992, 94.
[29] The date of 22 for this inscription has been determined using prosopography.
[30] See commentary at *ILS* 5939.

6.1267a), on the Esquiline (*CIL* 6.1267b; *CIL* 6.31573), on the Aventine hill (*CIL* 6.31574), and on the Quirinal hill (*CIL* 6.37037).[31] Tiberius' name does not appear in the extant text and the work is said to be done by a decree of the senate, in keeping with Tiberius' emphasis on cooperation.

In contrast, the two extant land boundary stones of Claudius feature the emperor's name in his capacity as censor. One of the duties of the censors was to audit land holdings. We have examples of Claudius' and Vitellius' work physically manifested on boundary *cippi* in Rome. The first example is an inscription marking the reclamation of land that had been illicitly seized by private persons. Dating to 47-48, it was discovered and documented in the early 18th century and has since been lost:

[Ti(berius) Claudius Caes(ar) Aug(ustus)]
[L(ucius) Vitellius P(ubli) f(ilius)]
[ex] s(enatus) c(onsulto)
[ce]nsores
[l]oca a pilis et colum[nis]
quae a pri⊥atis
possidebantur causa
cognita ex forma in
publicum restituerunt.

> Tiberius Claudius Caesar Augustus and Lucius Vitellius, son of Publius, the censors, by a decree of the senate, having examined the case, restored to the public from the areas from the piers and columns which were siezed by private persons. (*CIL* 6.919 = *ILS* 211)

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[31] The inscriptions on the Aventine and Quirinal hill use the verb *redegerunt* (reduced/restored) instead of *restituterunt* (restored). The inscription from the Quirinal hill measures 200 x 77 x 30 cm with letter heights between 3.5 and 6.7 cm. These boundary stones are similar in size to all of the other extant *cippi*.

Comparing the Tiberian and Claudian inscriptions and putting aside for the moment the important question of administrative agency, the most obvious difference lies in the orthography and language. A Claudian digamma is used in *priϝatis*, while the Tiberian inscription reads *privato*. The use of the plural *privatis* in the Claudian inscription homes in on the individuals who were illegally holding the land, while *privato* is much more generic and probably more diplomatic.[32] We cannot trace the use of the new Claudian letters to a specific moment and their use was not uniform. Another apparent difference are the groups of individuals responsible for the stone. On the Tiberian *cippi*, the five *curatores locorum publicorum iudicandorum* are listed at the top of the inscriptions as the agent of the action, while on the Claudian stone the two censors are inscribed, with the emperor listed first. The *curatories locorum publicorum iudicandorum* are mentioned only in these Tiberian inscriptions. It may be that the office ceased to exist during the Julio-Claudian period.[33]

The Claudian inscription includes additional spatial details, the area from the piers and columns (*loca a pilis et columnis*). Since this inscription was found near the

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[32] A boundary marker dating to 75 under Vespasian uses privatis rather than privato and gives the emperor's name as the authority. *CIL* 6.933 = *ILS* 249: Imp(erator) Caesar | Vespasianus Aug(ustus) | pontif(ex) max(imus) tribunic(ia) | potest(ate) VI imp(erator) XIIII p(ater) p(atriae) | co(n)s(ul) VI desig(natus) VII censor | locum viniae publicae | occupatum a privatis | per collegium pontificum | restituit.
[33] Talbert 1984, 373.

banks of the Tiber river, I argue that the *pila* referred to are piers from harbor infrastructure. On one of the decorative souvenir flasks engraved with a depiction of Puteoli, a label *PILAS* appears.[34] These appear to be piers driven into the water near the shore. The term appears in literary works and in inscriptions with reference to harbors and docks.[35] This Claudian inscription could be read as explicit evidence that private individuals had encroached upon riverbank territory and that Claudius sought to keep these areas in the public domain. This initiative corresponds with the construction of Portus, discussed above in Ch. 2, and the shoring up of the riverbanks, which I discuss below. The addition of spatial information in infrastructure inscriptions, beyond measurements to the next *cippus*, I argue, is a hallmark of Claudius' reign. One example is the aqueduct arch inscription on the Porta Maggiore (*CIL* 6.1256 = *ILS* 218), which contained detailed information on the sources of the Aqua Claudia and Aqua Anio Novus and the distances each aqueduct traveled. Another example of spatial specificity can be seen in a riverbank boundary of Claudius' reign, discussed below (*CIL* 6.31545 = *ILS* 5926).[36]

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[34] Painter 1975, 57.
[35] See, for example, Livy 40.51.4 referencing the piers of the Tiber's bridges; Sen. *Ep*. 77.1 describing people standing on the docks in Puteoli watching out for Alexandrian ships; and *CIL* 10.1640.
[36] Paullus Fabius Peṛṣ[icus] | C(aius) Eggius Marull[us] | L(ucius) Sergius Paullus | C(aius) Obell[i]us Ru[fus] | L(ucius) Scriboniu[s Libo] | curatoṛ[es riparum] | et alv[ei Tiberis] | ex auctorita[te] | Ti(beri) Claudi Caesaris | Aug(usti) Germanic[i] | principis s[---] | ripam cippis pos[itis] | terminaverunt a Tr[ig]ar[io] | ad pontem Agrippa[e] --Lucius Sergius Paullus, Caiuds Obellius Rufus, Lucius Scribonius Libo, curatores riparum and alvei Tiberis, with the authority of Tiberius Claudius Caesar Augustus

The other land boundary inscription dating to Claudius' time as censor with Lucius Vitellius confirmed private land holdings of the Volusii Saturnini family:

Imp(erator) [Caesar Divi f(ilius)]
Aug(ustus), [co(n)]ṣ(ul) VI[I a]ḍ[tribuit]
Ti(berius) Claud(ius) Caesar Au[g(ustus)]
Gerṃ(anicus), pontif(ex) max(imus), trib(unicia)
pọ̣[t]est(ate) VII imp(erator) XV p(ater) p(atriae)
L(ucius) Vitellius censores
cognita causa ad-
tributionem divi
Aug(usti) pertinentem ad
insulam Volusianam
con[fi]rmaverunt

> Imperator Augustus, son of divine Caesar, consul for the 7th time, granted [this territory]. Tiberius Claudius Caesar Augustus Germanicus, Pontifex Maximus, holding tribunician power for the 8th time, imperator for the 15th time, father of his country, and Lucius Vitellius, the censors, having examined the case, confirmed the pertinent attribution of the Divine Augustus to the Volusian insula. (*CIL* 6.40887)[37]

The inscription from 48 mentions Claudius' and Vitellius' approval of landholdings given for this Volusian insula by Augustus. Augustus' name appears twice in the inscription, first at the top, marking the original assignment of the land, and then as the Divine Augustus, the first princeps' title during the Claudian period. Putting the names

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Germanicus, our princeps, marked the bank by placing boundary markers from the Trigarium to the bridge of Agrippa.

[37] This inscription is very fragmentary with dimensions of 83 x 62 x 46 cm and letter heights between 2 and 4 cm. The surviving stone is slightly smaller than the typical cippus, but the letter heights are similar.

of two emperors on this stone must have been a strong confirmation of the property of the Volusii Saturnini. It also emphasizes Claudius as a continuer of Augustus' actions.

Both the Claudian era property marking stones were found in the Forum Boarium (Fig. 32). The Forum Boarium flanked the Tiber River on the right bank near Tiber Island.[38] One of the most ancient parts of the city, the Forum Boarium may have served as a market area; it also was home to one of the most important early cult sites of Rome, the Ara Maxima Herculis.[39] Due to its location and functions, the Forum Boarium must have seen a significant amount of foot traffic, and the bridges to it from the Transtiberim across the Tiber are among Rome's oldest, the ancient wooden Pons Sublicius (seventh century BCE) and the first stone bridge across the river, the Pons Aemilius (179 BCE; Livy 40.51.4).[40] Further evidence supporting a large amount of traffic moving through the Forum Boarium is that three gates of the Servian wall opened into the area. Where there were gates, there were streets carrying people and traffic

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[38] See Richardson 1992, 162-64 and *LTUR* 2.295-97, s.v. "Forum Boarium," (F. Coarelli), for more on the history and topography of the Forum Boarium.
[39] See Richardson 1992, 186-87 and *LTUR* 3.15-17, s.v. "Hercules Invictus, ara Maxima," (F. Coarelli) for more on the Ara Maxima.
[40] See Richardson 1992, 296-97 and *LTUR* 4.106-107, s.v. "Pons Aemilius," (F. Coarelli) for more on the Pons Aemilius. See Richardson 1992, 299 and *LTUR* 4.112-113, s.v. "Pons Sublicius," (F. Coarelli) for more on the Pons Subilicius. Because the Pons Subilcius was always made of wood in antiquity, it's exact location of crossing remains a matter of debate. Tucci 2004, 199-200 presents the different proposals and uses the Severan Marble Plan to support his argument.

through them.[41] The proximity of the property boundary stones to the Tiber displays the emphasis placed on property in low-lying areas of the city.

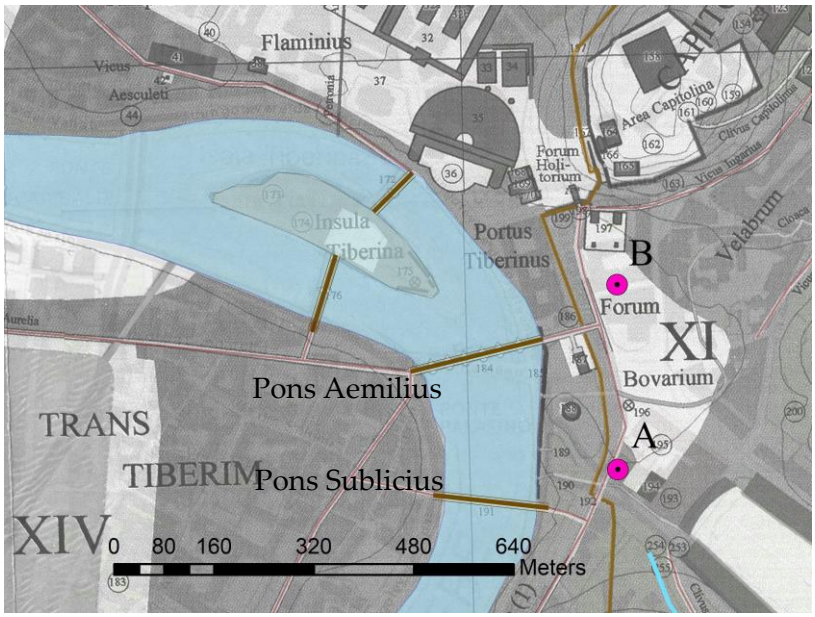

Figure 32: Locations of the two land boundary inscriptions dating to Claudius' reign. (A) *CIL* 6.919 = *ILS* 211 (B) *CIL* 6.40887.

We may presume that Rome's recurrent flooding often confused boundaries and property lines. Drawing such a conclusion about an emperor's regional focus is inevitably speculative, given that evidence from other parts of the city may easily not survive. However, I do believe it is significant that the extant property stones from the Augustan and Tiberian period all clustered on the eastern side of the city, while Claudius' clustered in the flood plain of the Tiber river.

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[41] Malmberg and Bjur 2011 diachronically surveys the changes in urban development from the Augustan period to Late Antiquity at the Porta Tiburtina and Porta Esquilina in Rome. Even though the gates in the Servian wall were not defensive borders in the first century CE, they were nodes of movement.

Other than these land boundary stones from Claudius' time as censor, no *cippi* offer a similar epigraphic formula. But the office of the curator of public land continued to exist in Rome and elsewhere, albeit with a slightly different name. A funerary inscription from around 60-70 lists a *curator locorum publicorum* as one of the offices held by the deceased (*CIL* 6.1544). Two statue bases found in the Forum of Caesar, one to the Divine Hadrian and the other to Divine Sabina, were dedicated by Aemilius Papus and Valerius Urbicus, the *curatores operum locorum publicorum*.[42] What was the role of the Tiberian *curatores locorum publicorum iudicandorum*?[43] In addition to the boundary stone above, the office is mentioned in the *Senatus Consultum de Pisone Patre* of 20, the record of the judgement rendered upon Gaius Calpurnius Piso due to his participation in the death and dishonoring of Germanicus.[44] One of the punishments involved the destruction of Piso's property, which was to be carried out by the *curatores locorum publicorum iudicandorum* (*SCPP* 105-108; Tac. *Ann*. 3.17-18).[45] The destruction of homes by law was a kind of *damnatio memoriae* for the individuals.[46] The only evidence for the *curatores locorum publicorum iudicandorum* is Tiberian. In reviving the office of censor, a

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[42] The Hadrian statue base: *CIL* 6.988 = *ILS* 331. The Sabina statue base: *CIL* 6.40528 = *AE* 1934, 146.
[43] Robinson 1992, 87-88.
[44] See Eck and Caballos 1996.
[45] Tacitus' account does not include all of the punishments laid out for Piso in the *SC de Pisone Patre*. See Woodman and Martin 1996, 113-18, 185-88 for more on what the omissions can tell us about Tacitus' historical method.
[46] See Flower 1998 for a useful discussion of the "memory sanctions" in the *SC de Pisone Patre*; and Bodel 1999, 58-60 for more about the destruction of Piso's house.

position which no other emperor had assumed, Claudius and Vitellius took on the duties of the *curatores locorum publicorum iudicandorum.*

Beyond boundaries and the destruction of property as punishment, the state had to also oversee the land transactions between private owners. Regulations were put in place in Rome to prevent shoddy construction techniques and the act of buying land only to level existing structures (Tac. *Ann*. 12.4, *Hist*. 11.52; Suet. *Vit*. 2.4).[47] Municipal charters of the late Republic and early Principate, like that of Tarentum in the mid-first century BCE, indicate that a building of the same quality or better had to be rebuilt within a year of demolition. Failure to follow these regulations would result in a fine for the loss.[48] A. D. E. Lewis proposed that the premise for anti-demolition policy was to preserve housing and thus social stability.[49] The expanded implementation of these anti-demolition regulations during Claudius' reign might suggest a similar dedication to preserving affordable housing for the lower classes in the growing city.

A *Senatus Consultum* from Claudius' reign, dating to 45, the SC *Hosidianum*,[50] included a clause forbidding the sale of homes in the city and in the surrounding countryside for profit. Specifically, the law appears to have prohibited the destruction

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[47] See Robinson 1992, 33-46 for more on building controls and regulations in Rome. Augustus limited the height of new buildings built along the course of public streets (Strabo 5.3.7; Hor. *Epist.* 1.1.100).
[48] Robinson 1992, 42.
[49] Lewis 1989.
[50] For a text and commentary, see Rainer 1987.

of buildings for profit (*Dig.* 18.1.52).[51] The harshness of the penalty outlined in the *senatus consultum* would have deterred parties from entering into such sales: the seller had to pay a fine double the price, and the buyer lost the money paid and the property. The overarching goals of such legislation were to protect the urban display of the glories of Rome, but a secondary effect of these policies may have been preserving the housing stock for the poorer elements in society. Property boundaries and regulations, especially those helping protect public land and multi-dwelling housing, were a point of emphasis during Claudius' censorship.

4.3.2 Riverbank Boundaries

The next type of boundary from the Claudian period I analyze are the bank boundaries of the Tiber river. Although the demarcation of public riverbank territory could technically be counted among the land boundaries discussed above, I treat them separately because riverbank markers served a more specialized purpose. Furthermore, following a major flood in 15 during the reign of Tiberius, Rome's riverbanks were

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[51] *CIL* 10.1401 = *ILS* 6043: Cum providentia optumi principis tectis quoque | urbis nostrae et totius Italiae aeternitati prospexerit, quibus || ipse non solum praecepto augustissimo set etiam exsemplo | suo prodesset, conveniretq(ue) felicitati saeculi instantis | pro portione publicorum operum etiam privatorum custodi<r>e | deberentque apstinere se omnes cruentissimo genere | negotiationis, ne<que> inimicissimam pace faciem inducere || ruinis domum villarumque, placere, In senatu fuerunt CCCLXXXIII - Since the providence of the best Princeps has seen also to the buildings of our city and of all of Italy for eternity, which he has helped not only by his most august precept but also by his own example; and since it suits the good fortune of the era that is upon us to take care of both public and private structures in the degree proper to each; and since all should refrain from the most bloody form of business and not introduce a sign incompatible with peaceful conditions though the destruction of town and country houses, it is the will of the senate…

under the supervision of the *curatores riparum et alvei Tiberis,* the curators of the banks and bed of the Tiber.[52] Taking into consideration the changes over time in the care for and proper allocation of public riparian land, I argue that the office was reorganized during Claudius' reign and that the actions of these new officials permitted further development of infrastructure along the Tiber River from the new port at Portus up to Rome. The evolution of the epigraphic formula for riverbank boundary stones also highlights new trends developing under Claudius that persisted after his death, as well as others that remained a unique mark of his reign.

Protecting public territory along the Tiber's banks was crucial because towing was the preferred method for moving cargo into the city from the port. December to March saw flooding and increased water levels, creating a current that was difficult to navigate or predict.[53] The winter current made towing upriver, rather than sailing or rowing, the most effective way to transport goods, but during the winter months even towing would be difficult due to flooding and increased water levels. Ancient literary evidence mentions towing done by *helciarii*, men, oxen, and/or mules (Hor. *Sat*. 1.5; Strabo 5.3.5-6; Prop. 1.14.3-4; Apul. *Met*. 11.48).[54] Towing barges along the river was an intensive process. According to modern estimates, it would take three days to move

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[52] See Leonardi 2013, 5.
[53] Malmberg 2015, 189.
[54] See Malmberg 2015 191n12 for a full list of evidence for cargo towing into the city of Rome.

material upstream into the city and two days to return to Portus/Ostia.[55] Road travel would have been the preferred method for transport of people, which will be relevant when we consider the roads bringing people into the city from the port.

Procopius of Caesarea, a sixth-century historian and advisor to the military commander Belisarius, provides a cogent description of this river transport and elucidates why towing cargo in barges into the city was the best option:

> ἐπειδὰν οὖν οἱ ἔμποροι ταῖς ναυσὶν ἐς τὸν λιμένα ἀφίκωνται, ἄραντες τὰ φορτία ἐνθένδε καὶ ταῦτα ἐνθέμενοι ἐν ταῖς βάρεσι, πλέουσι διὰ τοῦ Τιβέριδος ἐπὶ τὴν Ῥώμην, ἱστίοις μὲν ἢ κώπαις ἥκιστα χρώμενοι, ἐπεὶ οὔτε ἀνέμῳ τινὶ ἐνταῦθα οἷά τέ ἐστι τὰ πλοῖα ὠθεῖσθαι συχνά τε τοῦ ποταμοῦ ἐπὶ πλεῖστον ἑλισσομένου καὶ οὐκ ἐκ τοῦ εὐθέος ἰόντος, οὐδέ τι ἐνεργεῖν αἱ κῶπαι δύνανται, τῆς τοῦ ὕδατος ῥύμης ἀπ᾽ ἐναντίας αὐταῖς ἀεὶ φερομένης. βρόχους δὲ ἀπὸ τῶν βάρεων ἐς τῶν βοῶν τοὺς αὐχένας ἀρτήσαντες ἕλκουσιν αὐτὰς ὥσπερ ἁμάξας ἄχρι ἐς Ῥώμην.[56]
>
> Now when the merchants reach the harbor with their ships, they unload their cargoes and place them in the barges, and sail by way of the Tiber to Rome; but they do not use sails or oars at all, for the boats cannot be propelled in the stream by any wind since the river winds about exceedingly and does not follow a straight course, nor can oars be employed, either, since the force of the current is always against them. Instead of using such means, therefore, they fasten ropes from the barges to the necks of oxen, and so draw them just like wagons up to Rome. (Procop. *Goth.* 5.26.11-12)[57]

Clearly, barges towed from the mouth of the Tiber into Rome remained an effective method of moving material all the way into the sixth century. The banks of the river,

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[55] Malmberg 2015, 192.
[56] See Dewing 1882 for the Greek text of Procopius seen here.
[57] Translation by Dewing 1882.

especially upon reaching the built-up areas of the city, needed to remain clear for towpaths.

Simultaneously a blessing and a curse for the Roman people, the Tiber frequently overflowed its banks making the low-lying territory in the floodplains less desirable for habitation (see chapter 3). This flooding caused multitudes of problems, such as damaging the structural integrity of buildings and spreading disease: in some cases it also caused the complete collapse of sections of the riverbank.[58] Once areas were shored up and rebuilt, the state needed to prevent private builders from encroaching again upon the public territory. These efforts were not always successful, as the Severan Marble Plan shows some structures that seem to be at the very edge of the riverbank (see Fig. 33).[59]

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[58] Robinson 1992, 91. An inscription dating to Diocletian's reign, *CIL* 6.51342 = *ILS* 5924, records the restoration of the riverbank following complete collapse.

[59] Stanford's website for the Forma Urbis Romae project (http://formaurbis.stanford.edu) points out that the geographic and political boundaries are not marked on the Severan Marble Plan, including the outline of the Tiber River and the Regional boundaries.

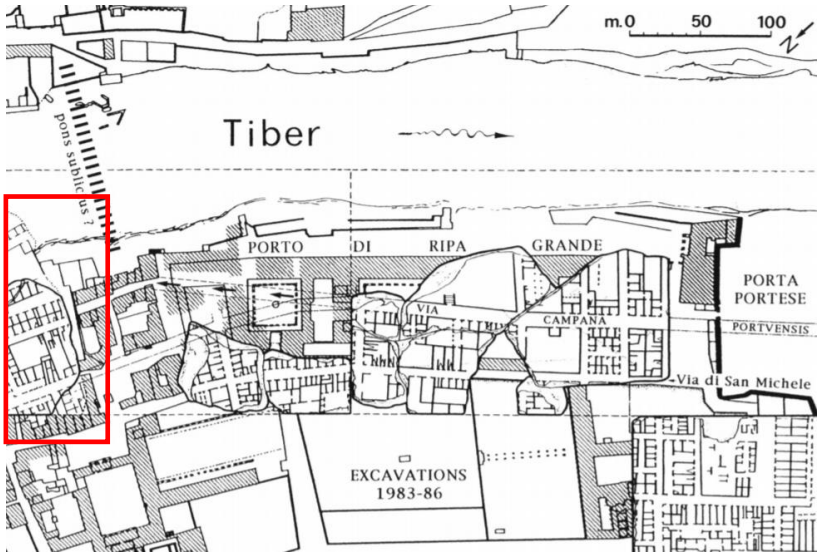

Figure 33: Reconstruction of Severan Marble Plan fragments along the Tiber River (Tucci 2004, Fig. 6).

Areas along the Tiber river's banks, like the Forum Boarium and Forum Holitorium, had been continuously inhabited from Rome's early history. However, the earliest extant evidence for the official marking of riverine land dates to 55/54 BCE (*CIL* 6.40848). Much like the aqueduct *cippi* and the land boundary *cippi*, the riverbank boundary stones were usually rectangular slabs of travertine inscribed with the names of authorities, and the act being accomplished. One of the surviving *cippi* from 55/54 measures 105 x 65.5 x 38 cm with letter heights between 5 and 6 cm, similar in size to the aqueduct stones discussed in Chapter 3.[60] By examining and comparing the changes over time in the epigraphic form and content of these riverbank *cippi*, I highlight some of

[60] The height of this stone is about half the height of the typical *cippus*, but the bottom half of the travertine slab seems to be missing.

the similarities and differences between the Claudian stones and those that came before and after.

One of the Late Republican riverbank boundary markers can be seen in figure 34.[61] Several stones bearing this same inscription with an identical composition have been excavated from the Tiber's edges, mostly on the left bank of the river.[62] At the top of the inscription, Marcus Valerius Messalla and Publius Servilius Isauricus are identified as the censors, who set up these *cippi* in accordance with a decree of the senate (*ex senatus consulto*).[63] Shoring up the riverbank falls into the broadly defined duty of the censors to protect the property of Rome (Cic. *Leg*. 3.3). As we will see below, however, the power to put up *cippi* along the banks of the Tiber was not limited to the censors.

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[61] I used the University of Virginia's Waters of Rome online GIS timeline map (http://www3.iath.virginia.edu/waters/timeline/) as a starting point for gathering data on *in situ* riverbank boundary stones.

[62] Other examples of this 55/54 BCE riverbank cippus are: *CIL* 6.1234b-h; *AE* 1989, 80.

[63] *CIL* 6.37026: M(arcus) Valerius M(arci) f(ilius) | Ma(ni) n(epos) Messal(la) | P(ublius) Servilius C(ai) f(ilius) | Isauric(us) cens(ores) | ex s(enatus) c(onsulto) termin(averunt) - Marcus Valerius, son of Marcus, grandson of Manus, Messalla Publius Servilius, son of Gaius, Isauricus, censors, by a decree of the Senate, marked the boundary.

Figure 34: Late Republican riverbank boundary dating to 55/54 BCE (*CIL* 6.37026). Now in Museo Nazionale alle Terme di Diocleziano.

In 8 BCE, two consuls from the Augustan period erected some riverbank boundary stones also in accordance with a decree of the senate:[64]

C(aius) Marcius L(uci) f(ilius) L(uci) n(epos)
Censorinus
C(aius) Asinius C(ai) f(ilius) Gallus
co(n)s(ules)
ex s(enatus) c(onsulto) termin(averunt)

Gaius Marcus, son of Lucius, grandson of Lucius, Censorinus, Gaius Asinius, son of Gaius, Gallus, the consuls marked out the boundary by a decree of the senate. (*CIL* 6.31541 = *ILS* 5923)

[64] Several stones bearing the same inscription survive in the archaeological record.

A year later, in 7/6 BCE, riverbank *cippi* were put up by Augustus, by a decree of the senate, as we know from a cippus that was restored later by a group called the *curatores riparum*:

[Imp(erator) Caesar divi f(ilius)]
[Augustus]
pontif[ex maximus]
tribunici[a potest(ate) XVII],
ex s(enatus) c(onsulto) ter[minavit]
curatores riparum q[ui primi]
terminaverunt ex s(enatus) [c(onsulto) rest(ituerunt)]

> Imperator Caesar, son of a god, Augustus, Pontifex Maximus, with tribunician power 17 times, marked out the boundary by a decree of the senate. The curators of the banks, who first marked out the boundary, restored it by a decree of the senate. (*CIL* 6.31542 = *ILS* 5924a)

Thus, within two years, some boundary stones bearing the names of consuls, and others bearing the name of Augustus dotted the bank of the Tiber. The stone with Augustus listed as the agent has two parts: (1) Augustus marking the boundary, and (2) the *curatores riparum*, a body established by Tiberius, restoring the boundary. In less than fifty years we see a shift from censors, to the consuls, to the emperor himself shoring up the riverbank, and finally to the early initiatives of the *curatores riparum.* Under Tiberius, the early work of the *curatores riparum* centered on restoring previously existing stones to their positions. As we will see below, Claudius has the *curatores riparum* restore the riverbank but, like Augustus, has his name included in the inscription.

Another instance of the *curatores riparum* restoring an earlier stone can be seen in a riverbank boundary bearing an Augustan and Tiberian inscription (Fig. 35):

C(aius) Marcius L(uci) f(ilius) L(uci) n(epos)
Censorinus
[[C(aius) Asinius C(ai) f(ilius) Gallus]]
co(n)s(ules)
ex s(enatus) c(onsulto) termin(averunt).

curatores riparum qui primi
fuerunt, ex s(enatus) c(onsulto) restituer(unt).
r(igore) r(ecto) prox(imus) cip[p(us)] p(edes) LX.

Gaius Marcus, son of Lucius, grandson of Lucius, Censorinus, Gaius Asinius, son of Gaius, Gallus, the consuls marked out the boundary by a decree of the senate.

The curators of the banks, who were first, restored [this] by a decree of the senate. The next cippus is 60 feet in a straight line on either side.
(*CIL* 6.1235f = *CIL* 6.31541g)

The earlier inscription (8 BCE) and first five lines of the later inscription are nearly identical in terms of letter height and style. The third line of the initial inscription, the name of the second consul of 8 BCE, Gaius Asinius Gallus, appears to be erased. Asinius Gallus was charged with conspiring against Claudius in 46, which means that the name was likely erased in the second half of Claudius' reign. The final three lines of the inscription in figure 35 date to 15, while the original stone and inscription date to 8 BCE.[65] Tiberius reused the Augustan stone. The need to restore some of these Augustan

[65] Leonardi 2013, 164-165.

stones was probably a result of the devastating flood recorded in the literary sources in 15.

Figure 35: Riverbank boundary cippus from 8 BCE / 15 CE (photo by G. Alföldy).

A shift occurred during Claudius' reign. The riverbank stones began to be authorized by the emperor and not by the senate, as all the previous *cippi* had been.[66] Riverbank *cippi* continued to be set up throughout the principate. Alluvial build up from flooding made it necessary to replace buried stones, so new stones were put up when necessary. The shape of the riverbank certainly changed over time. A riverbank boundary stone from Claudius' reign (Fig. 36) survives in a fragmentary form, after being pulled from alluvial build up in the Tiber River. The travertine stone, at first

[66] Robinson 1992, 90.

glance, looks much like its predecessors. The text, however, includes some distinct differences, and is more detailed than the other stones we have seen:

Paullus Fabius Peṛṣ[icus]
C(aius) Eggius Marull[us]
L(ucius) Sergius Paullus
C(aius) Obell[i]us Ru[fus]
L(ucius) Scriboniu[s Libo]
curatoṛ[es riparum]
et alv[ei Tiberis]
ex auctorita[te]
Ti(beri) Claudi Caesaris
Aug(usti) Germanic[i]
principis s[---]
ripam cippis pos[itis]
terminaverunt a Tr[ig]ar[io]
ad pontem Agrippa[e]

> Lucius Sergius Paullus, Caiuds Obellius Rufus, Lucius Scribonius Libo, curatores riparum and alvei Tiberis, with the authority of Tiberius Claudius Caesar Augustus Germanicus, princeps, marked the bank by placing boundary markers from the Trigarium to the bridge of Agrippa. (*CIL* 6.31545 = *ILS* 5926)[67]

[67] The dimensions of this inscription are 160 x 80 x 24 cm with letter heights between 3.5 and 5 cm.

Figure 36: River bank boundary dating from 41-54 on display in the Museo Nazionale Romano: Terme di Diocleziano (photo by author).

Like the Tiberian *cippi*, the agents in the inscription are the five curators of the riverbanks. The difference is that Claudius' name appears as the authority behind the work. Without any of Claudius' imperial offices noted, the stone cannot be dated more precisely than to 41-54. A series of these *cippi* would have been visible on the banks of

the Tiber from the Trigarium, an equestrian training ground in the northern Campus Martius, to the bridge of Agrippa in the southern Campus Martius (Fig. 37).[68] Since *cippis* implies multiple copies and *cippi* from other restorations indicate a distance of around 60 feet to the next stone (*CIL* 6.1235f = *CIL* 6.31541g), we should visualize several copies of this inscription bearing Claudius' name along this 1700-meter-long stretch of the Tiber's right bank.[69]

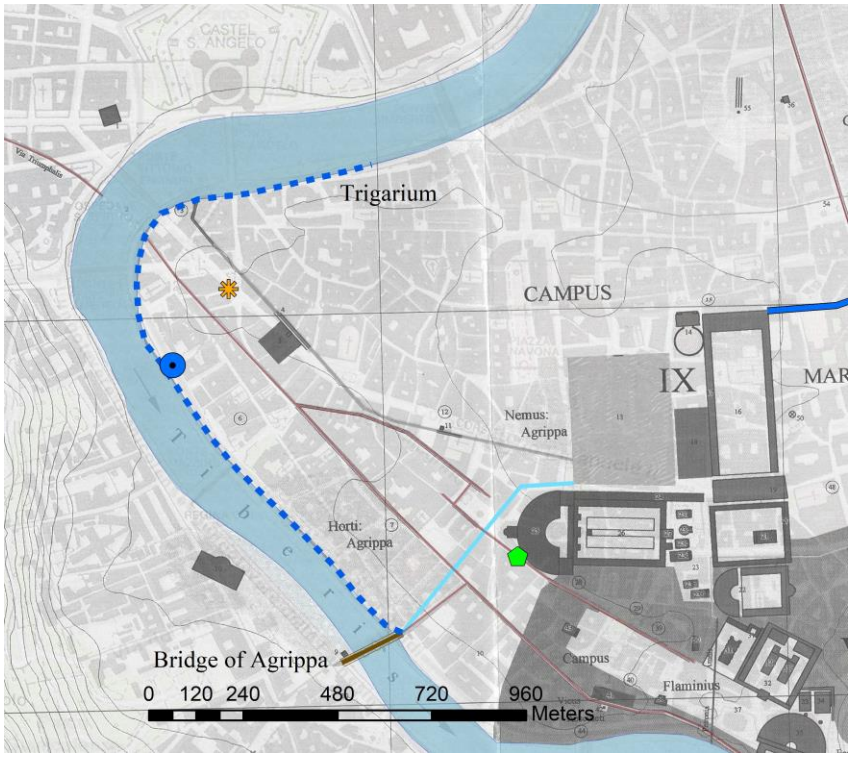

Figure 37: Map of the section of the Tiber's riverbank restored by Claudius from the Trigarium to the Bridge of Agrippa.

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[68] For more on the Trigarium, see Richardson 1992, 401-402 and *LTUR* 5.89-90 s.v. "Trigarium," (F. Coarelli).
[69] This measurement of 1700 meters was taken using Google Earth and assuming that the location of the Trigarium was just north of the Via dei Coronari in Rome. The location of the Trigarium is debated.

After Claudius, riverbank boundary stones continued to be set up under the authority of the Princeps. Much like we saw with Vespasian's inscriptional emulation of Claudius' infrastructure work on the water supply, in 73 riverbank boundaries were put up under Vespasian's authority:

ex auctoritate
Imp(eratoris) Caesaris Vespasiani
Aug(usti) p(ontificis) m(aximi) tr(ibunicia) p(otestate) IIII imp(eratoris) X p(atris) p(atriae)
co(n)s(ulis) IIII desig(nati) V censor(is)
C(aius) Calpetanus Rantius Quirinalis
Valerius Festus, curator riparum
et alvei Tiberis terminavit; r(igore) r(ecto)
prox(imus) cipp(us) p(edes) LII

> From the authority of Imperator Caesar Vespasian Augustus, pontifex maximus, holding tribunician power four times, imperator ten times, father of his country, consul four times, consul designate five times, censor, Valerius Festus, curator of the banks and riverbeds of the Tiber, marked the boundary. In a straight line the next cippus, 52 feet. (*CIL* 6.31548a)[70]

Besides the shift in the authority, the stone from Vespasian's reign returns to the formula seen during Augustus' reign, lacking the Claudian spatial specificity using landmarks to represent where the series of stones started and ended. Instead of the names of the curators taking the first position on the stone, Vespasian's name and his various titles take the primary position at the top of the stone.

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[70] One fragmentary version of this stone survives measuring 90 x 80 x 20 cm with letter heights between 4.8 and 8 cm.

From examining the epigraphic evidence and the literary sources that reference major flooding events in Rome's history, there seems to be a correlation between riverbank boundary work and flooding events.[71] The first riverbank stones date to 55/54 BCE, and both Cicero and Cassius Dio record details about a damaging flood in 54 BCE (Cic. *Ad Quint. Fr.* 3.7.1; Dio 39.61.1-2). Dio describes the complete destruction of houses in the flood plain. A massive inundation of the city that occurred in 15 (Tac. *Ann*. 1.76; Dio 57.14.7-8) provides an occasion for the restoration of the 8 BCE *cippus* (*CIL* 6.1235f = *CIL* 6.31541g). The flood caused significant destruction of buildings and loss of life (Tac. *Ann*. 1.76) and led Tiberius to set up the committee of five officials to care for the river, the *curatores riparum et alvei Tiberis* (Dio 57.14.8).[72] In 36, late in Tiberius' reign, another major flood impacted the city (Dio 58.26.5; Zonar. 11.3). Dio signals the severity of the flood by mentioning that people could navigate Rome's streets by boat. However, none of the literary sources mention a flooding event during Claudius' reign. Despite the silence in the literary sources, which may be due to the lack of a complete account from Tacitus, a major flood may have damaged the city during Claudius' reign, or this work on the riverbank was an act of preventative maintenance.

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[71] Aldrete 2007, 13-33 provides, in chronological order, the ancient texts and translations of all literary references to floods in the city of Rome. I have used this compilation of evidence to compare with the epigraphic evidence I collected.
[72] Leonardi 2013, 4; Aldrete 2007, 199.

As we have seen, flood control was a matter of importance at this time. Efforts to shore up the riverbank in Rome corresponds well with the canals dug at Portus. Claudius hoped to reduce the risk of inundations in Rome by digging channels from the Tiber to the sea (*CIL* 14.85 = Thylander B310).[73] This inscription explicitly mentions the danger caused by flooding inundations in the city. Although the canals at the mouth of the Tiber did not possess any flood prevention properties, as modern hydrology shows, a correlation between the canals being dug and the nature of flooding in Rome must have been perceived. Trajan later uses similar language in a now damaged inscription commemorating the clearing of these canals (*CIL* 6.964 = 14.88 = *ILS* 5797a = Thylander B311).[74] Trajan had work done on both the Portus and Fucine Lake drainage routes. The creation of Portus and the demarcation of riverbank territory along the Campus Martius during Claudius' reign were the catalyst for major changes in Rome's urban development along the banks of the Tiber river.

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[73] Thylander B310: Ti(berius) Claudius Drusi f(ilius) Caesar | Aug(ustus) Germanicus pontif(ex) max(imus) | trib(unicia) potest(ate) VI co(n)s(ul) design(atus) IIII imp(erator) XII p(ater) p(atriae) | fossis ductis a tiberi operis portu[s] | caussa emissisque in mare urbem | inundationis pericylo liberavit - Tiberius Claudius, son of Drusus, Caesar Augustus Germanicus, pontifex maximus, tribunician power for the 6th time, consul designate for the 4th time, imperator for the 12th time, father of his country, having dug canals from the Tiber for the sake of the works at Portus, and sent them forth to the sea, he liberated the city from the danger of flooding.

[74] Imp(erator) Caes(ar) divi] | Ne[rvae fil(ius) Nerva] | Tra[ianus Aug(ustus) Ger(manicus)] | Dac[icus trib(unicia) pot(estate)] | im[p(erator) 3 co(n)s(ul) 3 p(ater) p(atriae)] | fossam [fecit] | [q]ua inun[dationes Tiberis] | [a]dsidue u[rbem vexantes] | [rivo] per<e=F>n[ne instituto arcerentur]. This inscription dates between 102 and 109.

4.3.3 Sacred Boundaries: The Pomerium

Another boundary that underwent change during Claudius' reign was the *pomerium*. It was the most important sacred boundary of Rome, but many unanswered questions continue to vex scholars.[75] What is the meaning of *pomerium*?[76] Where were its limits during different points in Roman history?[77] Much ink has been spilled attempting to answer these difficult questions, but definitive answers are not necessary in this study.[78] Instead, I am interested in the visual manifestation of the pomerium in the city, and the symbolic and practical impact its extension by Claudius had on the city and people of Rome.

The *pomerium* was originally established as the augural boundary when Romulus plowed a furrow around the city demarcating the boundary (Tac. *Ann*. 12.24).[79] This act created the boundary for certain traditional religious functions. Aulus Gellius indicates

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[75] See Beard et al. 1998, 177-81; Richardson 1992, 203; and *LTUR* 4.96-105 s.v. "pomerium," (M. Andreussi) for general overviews on the pomerium and the scholarly debate surrounding its definition and extension.
[76] Even contemporaries of ancient Rome struggled to break down the meaning of pomerium. Mignone 2016, 329, 20n9 provides a recent evaluation of the various ancient references to the pomerium.
[77] In the Campus Martius alone, several different proposals have been made for the course of Claudius' pomerium. No one proposal is completely satisfying. Coarelli 1977, 820-22 argues that the southwestern Campus Martius could not have been included in the extensions of the pomerium because of the Roman triumph. When Claudius extended the pomerium, it had been over 60 years since the last time a non-imperial family member celebrated a triumph (L. Cornelius Balbus in 19 BCE). Additionally, as Mignone 2016, 338-39 points out, the imperial pomerium differed from the Republican one because emperors held proconsular imperium within the sacred boundary, which was strictly forbidden within the Republican pomerium.
[78] Mommsen 1879, 39 characterized the pomerium as one of the most difficult problems in the study of Roman topography.
[79] Varro *Ling*. 5.143 describes the general ritual for founding a city. Labrousse 1937, 169 provides a map that accommodates the ancient references, all of which post-date the legendary action.

that the *pomerium* was extended several times during the Republic, coinciding with the expansion of Rome's power (*NA* 13.14.2-3). Other extensions of the *pomerium* are reported for Sulla, Caesar, Claudius, Vespasian, and Aurelian.[80] Tacitus mentions an Augustan augmentation of the boundary in 8 BCE, but this extension is recorded in only a few other literary sources, like Cassius Dio (55.6.6). Tacitus's credibility and overall interest in providing details on the *pomerium* makes it difficult to dismiss his claim as completely erroneous. M. T. Boatwright convincingly argues that Claudius may have created the idea that Augustus extended the *pomerium* to serve as an imperial precedent.[81] The focus of this section is on the extension of the *pomerium* by Claudius with some attention given to his influence on future extensions.

Claudius extended the pomerium in 49, a year after conducting the census and culminating it with a lustration, and two years after his celebration of the Secular Games in 47.[82] Both of these events, especially the Secular Games, were large public spectacles attended by the people of Rome. Tacitus (*Ann*. 12.24) mentions that Claudius extended the pomerium *more prisco*, according to ancient custom, meaning that he may have

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[80] See Boatwright 1986, 13n1 for bibliography in support of and against an Augustan extension of the pomerium. Hadrian restored the Vespasianic pomerium stones after raising the ground level of the Campus Martius by 3 meters. See Boatwright 1987, 64-66 and Poe 1984, 79-81 for more on Hadrian's work on the pomerium.
[81] Boatwright 1986.
[82] Osgood 2011, 151-54 provides a useful discussion of the Claudian Secular games.

driven a plow around the new boundary as Romulus did.[83] Although the act of driving a plow would be difficult in the paved areas of the city, the ritual demarcation of the *pomerium* in 49 was another spectacle that the people could witness. Claudius took this ephemeral ceremony of extending Rome's ritual boundary and created the first monumental markers of the pomerium in the urban landscape.

Nine Claudian pomerial *cippi* survive in the archaeological record (see Fig. 38 for one well preserved example). The travertine has similar dimensions to the other *cippi* discussed above.[84] All nine of the inscriptions are uniform and were likely carved in the same workshop.[85] Based on the highest stone number on the extant inscriptions, at least 139 *pomerium* stones must have dotted the city marking this sacred boundary. No comparable *pomerium* markers have been found in the archaeological record for earlier extensions, including the ones reported for Sulla or Caesar.[86] While the absence of such stones from the record cannot ensure that some physical marker of the *pomerium* did not exist, the surge in boundary *cippi* installation during the early Principate that I have traced in this chapter suggests that the *pomerium* boundary stones are a Claudian invention. As aqueduct *cippi* fell out of use after 45, the form was appropriated to

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[83] Richardson 1992, 294.
[84] *CIL* 6.31537c = *ILS* 213 measures 86.5 x 66 x 29 cm with letter heights between 3.9 and 8.1 cm. Claudius' name at the top of the inscription is largest.
[85] Edmondson 2015, 119.
[86] Mignone 2016, 439n56 mentions that a passage in Varro could prove the existence of Sullan *pomerium* stones, but there is no epigraphic or archaeological evidence to back this idea up.

commemorate the pomerial extensions. Tacitus describes the Claudian pomerium boundary as easily recognizable, which may also speak to the visibility of the *cippi* (Ann. 12.24: *et quos tum Claudius terminos posuerit, facile cognitu et publicis actis perscriptum*).

Figure 38: Pomerium stone of Claudius now in the Museo Nazionale Romano: Terme di Diocleziano (photo by author).

Most *pomerium* stones in the city are now displayed recessed into the surface of a wall.[87] But this effaces much of the meaning of the *cippi*. Inscriptions on the top and sides of the stone show that they were either free-standing or at least had their thickness

[87] See, for example, the Vespasianic stone mounted in the wall outside S. Cecilia in Trastevere (*CIL* 6.31538c).

exposed. "*Pomerium*" was inscribed across the top face of the *cippus* and the series number was inscribed on the side. On the front of the Claudian *pomerium* stones was the following inscription:

Ti(berius) Claudius
Drusi f(ilius) Caisar
Aug(ustus) Germanicus
pont(ifex) max(imus) trib(unicia) pot(estate)
VIIII, imp(erator) XVI, co(n)s(ul) IIII
censor p(ater) p(atriae)
auctis populi Romani
finibus, pomerium
ampliaƎit terminaƎitq(ue)

> Tiberius Claudius, son of Drusus, Caesar Augustus Germanicus, pontifex maximus, holding tribunician power for the 9th time, imperator 16 times, consul for the 4th time, censor, father of his country, expanded and marked the boundaries of the pomerium, thus enlarging of the territory of the Roman people. (*CIL* 6.31542 = *ILS* 5924a)

Vespasian replicated the visual layout and formula for a *pomerium* stone set by Claudius when he expanded the sacred boundary in 75. The one difference is that the *cippi* of Vespasian do not use the Claudian digamma (Ǝ) in the verbs *ampliavit* and *terminavit* (*CIL* 6.31538c).[88] In 121, Hadrian conducted a restoration of the *pomerium*, although he did not seem to have extended the boundary (*CIL* 6.1233a = 31539a).[89]

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[88] The pomerium stones of Vespasian: *CIL* 31538a-c = *ILS* 248.

[89] *CIL* 6.1233a = 31539a: [Ex S(enatus)] C(onsultum) Collegium | Augurum auctore | Imp(eratore) Caesare Dìvì | Traiani Parthici f(ilio) | Dìvì Nervae nepote | Traiano Hadriano | Aug(usto) pont(ifici) max(imo) trib(unicia) | pot(estate) V̄, co(n)s(uli) IIĪ, proco(n)s(uli), | terminos pomerìì | restituendos curavit – From a decree of the senate, the college of the Augurs, with the authority of Imperator Caesar Trajan Hadrian Augustus, son of Divine Trajan Parthicus, and grandson of Divine Nerva, pontifex maximus, holding tribunician power five times, consul three times, proconsul, took care to restore the boundary of the

Emilio Rodriguez-Almeda argues that the Britannic Victory arch in northern Rome, completed in 51, marked the spot where the *pomerium* crossed the Via Flaminia in the Campus Martius.[90] While the arch has clear symbolic resonances with the extension of the *pomerium* through its celebration of the extension of the empire into Britain, I do not think it had to be part of the *pomerium*. Figure 39 maps the find spots of the Claudian pomerium stones and arches. One was found very far north on the Via Flaminia, in fact so far north that scholars believe the boundary must have made a sharp turn down to the British Victory arch in order to leave part of the Campus Martius outside the *pomerium*.

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pomerium. The same inscription is repeated on the opposite face. This inscription was found in the Campus Martius under Piazza Sforza Cesarini 18. Boatwright 1987, 265-66.

[90] Rodriguez-Almeda 1980, 200-202; Rodriguez-Almeida 1981, 126. Poe 1984, 70 agrees with Rodriguez-Almeda's proposal that the Britannic Victory Arch marked the pomerium's crossing of the Via Flaminia.

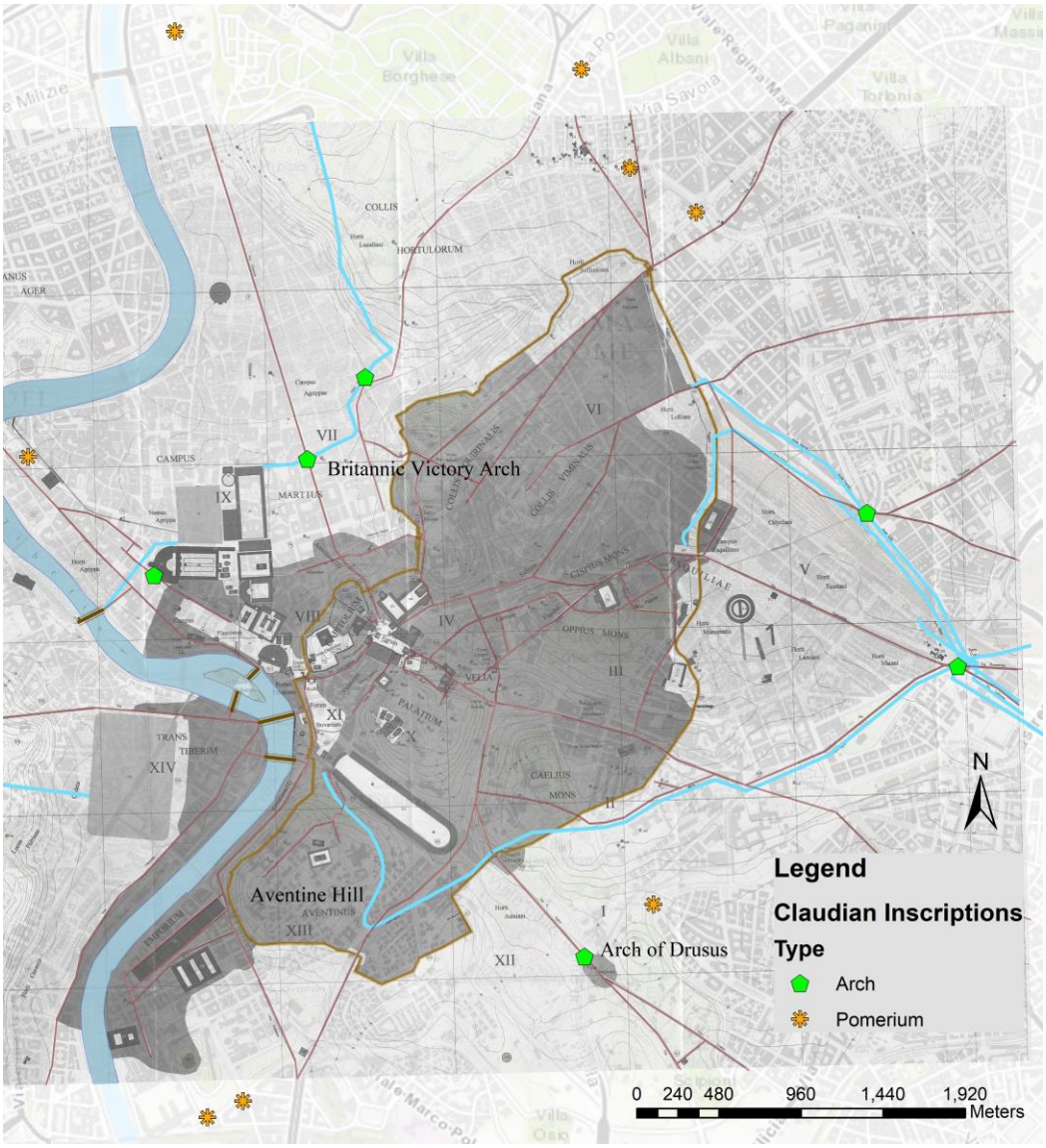

Figure 39: Map of Claudian Pomerium stones and arches in Rome.

The exact path of the pomerium at different points in Roman history remains the subject of scholarly debate. In the studies of the pomerial extensions into the Campus Martius by Claudius and Vespasian, scholars have deduced vastly different borders

from the same body of evidence. Figure 40 is a map of three different proposals for the pomerium in the Campus Martius.[91] Scholars have attempted to calculate the distance between pomerial stones. Platner and Ashby calculated that the *cippi* were each 240 Roman feet apart from one another.[92] The 240 Roman feet figure can be seen inscribed on other imperial *cippi*, such as the aqueduct *cippi* discussed in Chapter 3 (*CIL* 6.31565d = *ILS* 5747b), but the pomerium *cippi* do not mention a standard distance. Additionally, we simply do not have enough inscriptions in situ to verify the calculations. Labrousse proposes that the *cippi* were between 70 and 150 meters away from each other.[93] I think we are conceiving the *pomerium* incorrectly by attempting to draw linear boundaries between surviving *cippi*, which is why I have not done so in figure 39. A pomerial *cippus* is by its very nature a point, not a circuit of walls. The *pomerium's* primary purpose in separating military from civic powers in the city relies heavily on road networks, where generals and their armies would travel into and out of the city.

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[91] Labrousse 1937; Coarelli 1977, 820-22; Rodriguez-Almeida 1981, 124-26.
[92] Platner and Ashby 1929.
[93] Labrousse 1937, 37.

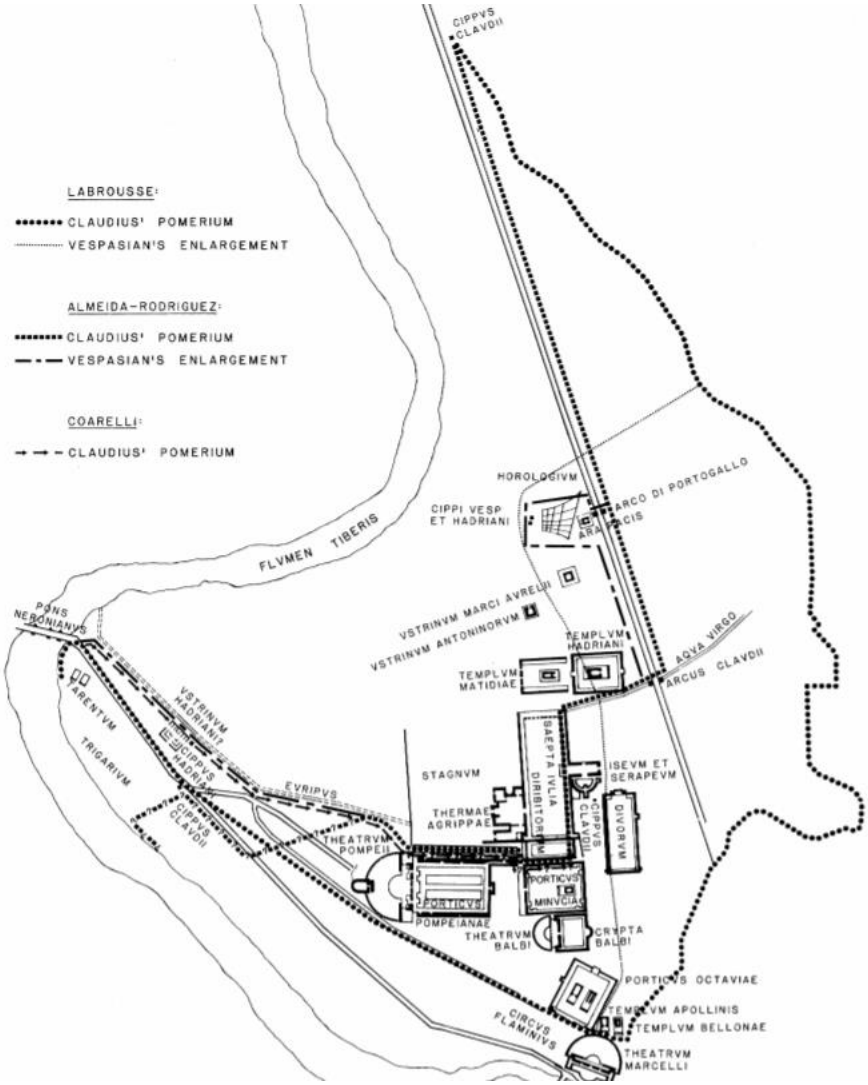

Figure 40: Map of the various proposals for the extensions of the pomerium in the Campus Martius under Claudius and Vespasian (Poe 1984, 57).

The most notable area included in the Claudian expansion of the *pomerium* is the Aventine hill. The exclusion of the Aventine in the original limits of the *pomerium* perplexed ancient historians and antiquarians, because the Aventine was within the

Servian walls, but not the pomerium. Seneca thought it was a waste of time and energy to try to rationalize why the Aventine was excluded (*Brev. Vit*. 13.8). Lisa Mignone makes an interesting geographic argument for the Aventine's exclusion from the *pomerium* until Claudius' reign. If the Aventine was not in Rome's sacred boundary, a victorious general approaching the city from the south would have direct access to the Campus Martius to await his triumph without crossing the *pomerium*.[94] For example, Sulla did not include the Aventine in his expansion of the boundary, and most of his campaigns were in southern Italy. By the reign of Claudius, the civic and military functions of the *pomerium* were rendered less significant. The emperors held tribunician power every year and their authority extended one mile outside the *pomerium* (Dio 51.19).

Mignone argues that Claudius altered the very meaning of the *pomerium* from a practical boundary to a symbolic example of Rome's expanding imperium.[95] In other words, Claudius wanted to expand the pomerium to celebrate his expansion of the empire with the victory in Britain. O. F. Robinson notes that the expansion of the pomerium by Claudius could have been driven by financial motives.[96] Incorporating the Aventine and emporium district into the pomerium may have extended the area where

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[94] Mignone 2016, 442-43.
[95] Mignone 2016.
[96] Robinson 1992, 5.

the *praetoria* duty could be collected to areas where a lot of commerce took place. Mignone doubts the fiscal motive, stating that one would expect the literary sources to have commented on the pomerium and *praetoria* boundaries being made coterminous for financial gain.[97] (Barbara Levick views Claudius' decision behind adding the Aventine hill and Pincian hill (in the northern Campus Martius) to the pomerium as not only a symbolic way to bring the "peoples' hill" of the city into the sacred boundary, but also to prevent the *comitia centuriata* from meeting on the Aventine.).[98]

I believe that all three of these explanations for Claudius' extension of the pomerium to the Aventine have their merits when we consider the infrastructure work done under Claudius. Discerning the motives of an emperor is virtually impossible, but the extension of the *pomerium*, and the creation of monumental markers follow from the other Claudian projects that monumentalized infrastructure. The symbolic addition of new areas of the city to the *pomerium*, like the Aventine hill, falls in line with Claudius' antiquarian interests and the practical initiatives designed to assure the food and water supply of Rome.

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[97] Mignone 2016, 438n50. Technically, this is an argument from silence.
[98] Levick 1990, 107.

4.4 Road Building

In many ways, boundaries and roads go hand in hand because boundaries mark territory and roads can both mark and cross those boundaries. The property, riverbank, and pomerium stones were placed along roads as a symbolic signifier to the person crossing into and out of that space. Arches, for example, served as both a boundary marker and a gateway for movement, and three monumental arches were built during Claudius' reign along the course of aqueducts.[99] Many of the most famous arches in the city of Rome were placed along the path of the triumphal route.[100] A diachronic study of developments near the Porta Esquilina has shown a correlation between gates and urban buildup.[101] The arches of Claudius, including the arch commemorating his father Drusus' campaigns in Germany along the Via Appia, created a circuit of Claudian monumental gateways into and out of the city (see Fig 39).[102]

Road building was one of the duties of the censors during the Republic. Appius Claudius Caecus famously oversaw the construction of the Via Appia from Rome to

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[99] See Chapter 3 for more on the aqueduct arches of Claudius.
[100] See Ostenberg 2009, Beard 2007, and Itgenshorst 2005 for recent works on the Roman triumph. Much as with the course of the pomerium, many conflicting attempts have been made to map out the path of the triumphal procession.
[101] Malmberg and Bjur 2011.
[102] Laurence 2011, 45 argues that the Arch of Drusus on the Via Appia (Dio 51.18) was used primarily to commemorate Augustus' victories. While this may have been the case during Augustus' reign, I believe that Claudius appropriated the arch to celebrate his family's successes in extending the reaches of the empire. Barrett 1999, 12.

southern Italy during his time as censor.[103] Though he was never censor, Augustus rebuilt some roads in Italy, notably the Via Flaminia.

Most of the documented road building initiatives from Claudius' reign involved roads outside the city of Rome. Claudius built several new roads, like the Via Claudia Augusta. It connected the Po river valley to Rhaetia and Noricum, provinces in southern Germany, crossing the Alps in the process (*ILS* 208). Roads built throughout the empire by the Claudian family helped facilitate further interconnectedness. One could perhaps this road building as evidence for increased centralization of government during the Claudian period, but we must be careful when assigning central agency to actions undertaken by governors and local officials of the provinces. Claudius seems to have been more interested in emulating his ancestor, Appius Claudius, than following in the footsteps of Augustus.

A group of officials called the *curatores viarum* together with the aediles, was responsible for the clearing and maintenance on roads. Suetonius vividly illustrates how disgusting the streets of the city could become when mentioning Vespasian's neglect of the roads during his time as aedile; a stray dog carried into Vespasian's residence a severed human hand from the road (Suet. *Vesp*. 5.4). Earlier, in 39 during

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[103] See Laurence 2011, 13-21; *LTUR* 5.130-33, s.v. "Via Appia," (J. R. Patterson); and Richardson 1992, 414 for more information on the Via Appia.

Caligula's reign, one of the consuls, Corbulo, prosecuted contractors and the *curatores viarum* for stealing funds from the state, and not show due diligence with them (Tac. *Ann*. 3.33; Dio 59.15). By 41, the end of Caligula's disastrous reign, the level of corruption in dispensing state funds for road maintenance may have left the roads of Rome in a state of disrepair.

Claudius reinstated funding to the *curatores viarum* (Dio 60.17).[104] These curators took care of choosing contractors and keeping up with general maintenance of roads, but larger projects, like bridge building and tunnel cutting, required imperial intervention (Plin. *NH* 36.124-5; Aur. Vic. *Caes*. 9). The Via Claudia Valeria, an extension of the Via Valeria from Confinum in central Italy near the Fucine Lake to Aeternum on the Adriatic Sea, was built in 48. This information is preserved on a milestone that uses one of Claudius' new letters, the digamma (*CIL* 9.6005).[105] Thus, Claudius' unique mark on epigraphy extended outside of Rome. Claudius' road building work outside of Rome helps contextualize the road building initiatives closer to Rome.

Because of its name, the Via Portuensis is believed to have been built in the first century, around the time when Claudius built the new port at Portus (ca. 46; Suet. *Claud.* 20.3). At mile two from the Pons Aemilius or Pons Sublicius,[106] which we discussed in

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[104] Laurence 2011, 46.
[105] Gradner 1920; Van Essen 1957.
[106] Tucci 2004; Loretti 2006, 223-30.

connection with the Forum Boarium, the Via Portuensis diverged from the Via Campana, taking a more direct route to the port before rejoining at the Ponte Galeria. The construction of the new port at Portus and the Via Portuensis marked a major turning point in the history of the Transtiberim. The primary road from Rome's port now led directly into Transtiberim on the Tiber's right bank, rather than to the Emporium district near the Aventine hill. Perhaps it was around this time that warehouses and utilitarian buildings cropped up along the banks of the Tiber in Transtiberim, as later seen in the Severan Marble Plan.

Since the movement of goods into the city was usually done using barges, the road must have helped facilitate the movement of people traveling into Rome from Portus up through Transtiberim. However, archaeological studies at and around Portus have yet to reveal a road directly into Portus. S. Keay and M. Millett argue that the Via Portuensis must have terminated at the Campus Salinarum Romanarum, the salt fields of Rome to the north of Portus.[107] This begs the question of the Via Portuensis' purpose.[108] Without a road between the port and Rome, how would wheeled and foot traffic get from the new port into the city? While the archaeological evidence is lacking, Keay and Paroli believe that the Via Portuensis must have been frequented by those

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[107] Keay and Millet 2005, 279-81.
[108] Keay and Paroli 2011, 13.

traveling between Portus and Rome. It was also a route used for imperial communication and was under imperial maintenance.[109] It seems unlikely that the Claudian port would have been completely cut off from the road networks.[110] Keay and Paroli's map of Portus under Trajan shows the Via Portuensis crossing the canal and connecting the port to the road into Rome. Perhaps this connection existed in some rudimentary form under Claudius, even if it were not paved until a later date.

Roads within the city of Rome itself are difficult to reconstruct for a specific moment in Roman history because so many of the ancient roads are buried under the modern city.[111] Pliny the Elder, a contemporary of Claudius' reign, recorded that more than 60 miles of streets wove through the city's built up area (Plin. *HN* 3.67).[112] Urban street networks are even more complex because they were not the work of a single agent, but rather an eclectic combination of urban planners, officials, and residents. Scholars often assume that the physical make-up of a city is a direct reflection of elite views of societal norms, but such an assumption presumes that members of varying socio-economic class and ethnic backgrounds willingly submit to elite visions of space

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[109] Keay and Paroli 2011, 13. Loreti 2006, 225 presents a fourth century inscription found along the ancient road recording imperial maintenance.
[110] The Via Flavia, which connected Portus and Ostia through Isola Sacra was paved in the Flavian period.
[111] This is why most work on urban road networks use cities like Pompeii and Herculaneum as case studies (see Kaiser 2011 and Hartnett 2017, for example).
[112] Hartnett 2017, 6.

syntax.[113] Roads are one of the greatest marvels of the Roman empire because of the extensive network. Claudius emulated his ancestor, Appius Claudius Caecus, and even his father Drusus by building new roads and seeking to maintain the old.

4.5 Conclusion

A city the size of Rome was in constant need of upkeep, and thus infrastructure related to organization and mobility was of the utmost importance. Rome experienced fires, floods, and other natural disasters more frequently than the literary sources document. Overseeing boundaries, property, and roads was critical to the livelihood of the massive population inhabiting the city. Over the course of this chapter, we have seen the different ways Claudius sought to ensure public and private property, including flood prevention, movement of people and goods into the city, and general road maintenance. We have also seen the unique Claudian developments in boundary marking, like the inclusion of spatial landmarks in riverbank boundary inscriptions and the invention of pomerial boundary stones.

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[113] Kaiser 2011, 3.

5. Conclusion: Claudius' Legacy in the City of Rome

The portrait of Claudius and the accomplishments of his reign have been shaped predominantly by the literary accounts of his tenure. The drama between Claudius, the senatorial order, his wives, and his freedmen is at the forefront. Even Claudius' death in 54 at 64 years of age was surrounded by political intrigue and accusations of foul play. Some authors, like Pliny the Elder, Tacitus, and Juvenal, record that the emperor died after eating mushrooms poisoned by his wife, Agrippina, because she was keen to expedite her son's rise to power (Plin. *HN* 22.46; Tac. *Ann.* 12.66-69; Juv. 6.620-23). We cannot know whether Claudius was deliberately poisoned or if he died from a sudden illness.[1] But how much of the quibbling and intrigue among the aristocracy would most of the city's population be privy to? Would people care about Claudius' physical ailments or antiquarian idiosyncrasies if they saw new water basins spring up in their neighborhood, increased stability in the supply of food throughout the year, and additional opportunities for work on public building projects? These questions are speculative, but they shed light on the problems inherent in reconstructing the legacy of an emperor primarily from the perspective of elite-male writers.

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[1] Grimm-Samuel 1991 argues that Claudius probably died from accidental consumption of a poisonous mushroom variety, not a mushroom that had poison introduced to it.

Prosopographical analyses of the consuls and the imperial court from 41 to 54 have revealed that the tension between the senate and Claudius was exaggerated by Tacitus' own perception of the principate.[2] I argue that the portrait of Claudius in Tacitus, Suetonius, and Dio is further nuanced by in depth investigation of public building in Rome during his reign. In his extant books, Tacitus spends very little time discussing Claudian building and most of it is negative. While the construction of the Aqua Claudia is briefly mentioned in the middle of a list of Claudius' accomplishments as censor (*Ann*. 11.13), the shortcomings of the Fucine Lake draining receive two chapters of treatment (*Ann*. 12.56-57). Since most of Claudius' building in Rome were not completed until after 47, Tacitus' uneven treatment cannot be pinned solely on the fact that we are missing the books that covered the early years of Claudius' reign. Tacitus used the Fucine Lake incident to cast Narcissus and Agrippina as the true sources of power and Claudius as the weak minded ruler (*Ann*. 12.57). Examining other forms of evidence in context offers a different view of Claudius and his work in the city of Rome.

As I have shown in this dissertation, under Claudius came a thorough revision of civic infrastructure. The period from 41 to 54 saw the mechanisms for food transport and distribution enhanced, the potable water supply vastly increased, and concerted

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[2] Michel 2015; Tortoriello 2004.

efforts to alleviate the destruction caused by seasonal flooding. These were not *ad hoc* efforts seeking a quick fix for an immediate problem, as had been the usual approach before, as with Tiberius' response to the fire that burned down the entire Caelian hill in 27 (Tac. *Ann.* 4.64). Tiberius remained in Capri for the incident and had money distributed to pay for the destroyed property. Cash distributions offered immediate compensation for the loss, but Tiberius was not physically present in the way Claudius was during the Aemiliana fire (Suet. *Claud.* 18.1). Similarly, the usual tactic in times of grain shortage was for the government to purchase an emergency allotment of grain for immediate distribution (Aug. *RG* 5).[3]

Claudius initiated projects that had long been considered impossible in terms of scale and funding, like draining the Fucine Lake and constructing an artificial harbor at the mouth of the Tiber river.[4] Augustus ignored entreaties from local peoples to drain the Fucine Lake, and Julius Caesar had wanted to initiate construction on the harbor, but abandoned the project due to its difficulty (Suet. *Claud*. 20.1). These difficult tasks were the hallmark projects of Claudius' reign, ones that had a significant enough impact for

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[3] Here Augustus boasts about alleviating the city from a grain shortage in the span of a few days.
[4] The emphasis on infrastructure during Claudius' reign was not limited to the city of Rome. Epigraphic evidence records local communities giving thanks for Claudian rule and influence (Scramuzza 1940b).

subsequent emperors to continue and augment his work later – notably, the *optimus princeps*, Trajan.[5]

Claudius was the first Roman emperor who needed to reestablish order after an assassination, but he would not be the last. Vespasian was left with the difficult task of distancing his rule from the prodigal Nero and the tumultuous civil wars of 69, while also legitimizing his own claim to power. The Flavian emperors are credited for their transferal of land from the sprawling Domus Aurea of Nero back to the people, most notably with the construction of the Baths of Titus and the Flavian Amphitheater. This had already been done under Claudius with the reconstruction of the Aqua Virgo after Caligula disrupted it, likely with his partially built amphitheater in the Campus Martius (Suet. *Claud*. 20; *CIL* 6.1252a = *ILS* 205). Augustus is the archetypical model for a Roman emperor, but Claudius must have had a sufficiently positive legacy for the Flavian emperors to complete work on this temple.

Why was Claudius the first to attempt necessary large-scale infrastructure? The yearly rotation of elected officials during the Roman Republic made decade-long projects difficult to initiate and oversee. Yet even Augustus, who ruled for over four decades, did not try to construct a harbor at the mouth of the Tiber river. Another

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[5] Trajan continued work on Portus, constructed a new aqueduct for the city called the Aqua Traiana, and reinitialized work on the canal to drain the Fucine Lake.

reason, I argue, ties to Claudius' upbringing out of the public eye. Claudius was ridiculed for his antiquarian interests in the literary sources, but perhaps the knowledge he gained through historical research highlighted the need for long-term solutions to problems such as grain shortage and flooding. With everything from the large-scale Aqua Claudia and Anio Novus to the minimum of 139 pomerium stones and multitudes of riverbank boundary stones, Claudius made infrastructure monumental.

Giving attention to seemingly insignificant archaeological and epigraphic evidence and its spatial context allows for a more holistic picture of the impact Claudian projects had on the city. The Great Fire of 64 destroyed two-thirds of the city, but figure 41 shows the areas of the city that received the most attention from Claudius, namely the Campus Martius and the aqueducts, remained unscathed. In fact, Tacitus tells us that Nero opened up public buildings in the Campus Martius for people who were displaced by the fire (*Ann*. 15.38: *sed solacium populo exturbato ac profugo campum Martis ac monumenta Agrippae, hortos quin etiam suos patefecit et subitaria aedificia extruxit quae multitudinem inopem acciperent*). I argue that the reign of Claudius, often neglected in the urban history of Rome, was the critical turning point for the city to reach a population of 1,000,000 in the second century. By building structures that addressed the needs of the general population, Claudius left an indelible mark on the city of Rome and crafted a

legacy among the people that differed from the elite Roman perceptions preserved in the ancient historical literature.

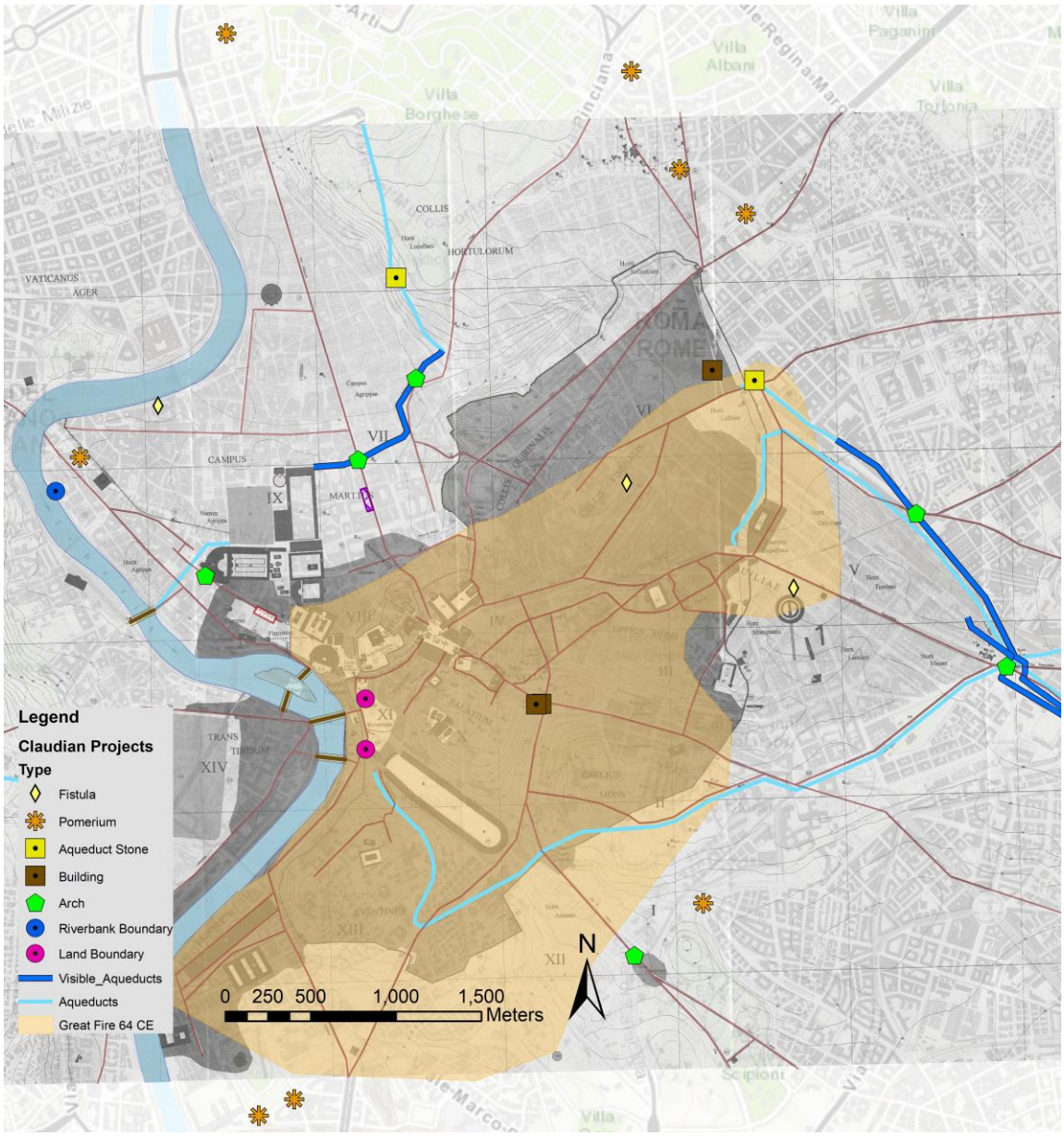

Figure 41: Claudian projects and the extent of the Great Fire of 64.

Appendix: Timeline of Events in Claudius' Reign

Date	Event				
	Political	**Military**	**Building in Rome**	**Natural Disaster**	**Travel**
41	Claudius named emperor by the Praetorian Guard following Caligula's assassination		Inscription recording the repair of a building by Cn. Sentius Saturninus on the Viminal Hill (*CIL* 6.31772; on the back of this inscription is a similar inscription dating to 22 BCE)	Grain Shortage in the city when Claudius became emperor (Sen. *Brev. Vit.* 18.5)	
42	Claudius as Consul II Execution of Appius Silanus		Construction begins on new port at Ostia Statue of Claudius added to Aenatores monument (*CIL* 6.40307)	Famine in the city (Dio 60.11.1)	
43	Claudius as Consul III	Conquest of Britain Lycia and Pamphylia become part of the Roman Empire	Altar of Augustan Pietas dedicated (*CIL* 6.562 = *ILS* 202—The inscription mentions the altar, but is not from the altar itself)		September (?) Claudius travels to Britain (Suet. *Claud*. 17.1; Dio 60.21.2) Claudius returns to the mainland after 16 days in Britain (Dio 60.23.1)
44		Judea made a	Part of Aqua Virgo repaired (*CIL*		Winter 44, probably in

		Roman province	6.31565d = *ILS* 5747b)		Lugdunum (based on archeological/epigraphic evidence, Halfmann 1986, 173). Claudius returns to Rome via Ravenna (Dio 60.23.1; Plin. *HN* 3.119; Halfmann 1986, 172)
45			Removes statuary cluttering public spaces and forbids citizens from erecting a statue without the permission of the senate, unless they build or repair a public work (Dio 60.15.2-3)		
46	Conspiracy of Asinius Gallus	Thrace made a Roman province	Aqua Virgo repaired (*CIL* 6.1252 = *ILS* 205; cf. *CIL* 6.1253-54, 31565, *ILS* 5747) Amphitheater of Caligula demolished (Suet. *Calig*. 21; cf. *CIL* 6.1252 = *ILS* 205) Canals dug at the mouth of the Tiber in the hopes of alleviating flooding		

			(*ILS* 207 = Thylander B310)		
47	Claudius as Consul IV Secular Games Claudius as Censor with Vitellius Conspiracy of Pompeius Magnus Conspiracy of Valerius Asiaticus		Aqua Claudia completed Senate Decree passed in September 47 CE that punished those who bought buildings with the intention of tearing them down to make a profit (*ILS* 211; Tac. *Ann*. 12.4, *Hist*. 11.52, Suet. *Vit*. 2.4).		
48	Claudius as Censor with Vitellius Conspiracy of Messalia and Gaius Silius				Claudius in Rome--Tacitus tells about Cn. Nonius, a Roman knight who was wearing a sword among a group paying respects to the emperor (*Ann*. 11.22), Claudius gives a speech to the senate regarding admitting provincials into the senate (*Ann*. 11.25; cf. Lyon Tablet) Sometime after closing the census,

					Claudius in Ostia for enough time for Messalina to marry Silius (Tac. *Ann*. 11.26); Claudius in Rome to receive Mithridates under military guard (presiding from the Rostra: Tac. *Ann*. 12.21)
49	Claudius marries Agrippina		Pomerium extended (*CIL* 6.1231 = 31537; *BullCom* 1913, 67)		
50	Claudius adopts Nero				
51	Claudius as Consul V Nero assumes the *toga virilis*		Britannic Victory Arch dedicated (*CIL* 6.40416)	Grain shortage in Rome	
52			Fucine Lake partially drained Aqua Anio Novus aqueduct completed (*CIL* 6.1256 = *ILS* 218) Aqua Claudia dedicated 1 August (Front. *Aq*. 1.13) Monumental Arch (Porta Maggiore) over Via		

			Praenestina and Via Labicana		
53	Marriage of Nero to Octavia				
54	Narcissus, imperial freedman, dismissed from his duties 13 October: Death of Claudius				
Claudian 41-54			Arch for Tiberius built (Suet. *Claud*. 11.3) Altar of Jupiter Depulsor dedicated (Capitoline Hill) (Phlegon, *Mirac.* 6) Temple of Salus rebuilt (Plin. *HN* 35.19) Carceres of Circus Maximus rebuilt (Suet. *Claud*. 21.3) Theater of Pompey restored by Caligula (Suet. *Calig*. 21) and rededicated by Claudius (Suet. *Claud*. 21.1; Dio	Aemiliana in the Campus Martius outside the Pomerium (Varro *Rust*. 3.2.6) burns (Suet. *Claud*. 18.1) Temple of Felicitas burned (Velabrum), not restored (Plin. *HN* 34.69) Temple of Salus (Quirinal Hill) burned (Plin. *HN* 35.19)	

			60.6.8) Porticus Minucia Frumentaria built (*CIL* 6.10223 = *ILS* 6071) Statue of Divine Livia added to the Temple of Divine Augustus (Dio 60.5) Warehouse on the Oppian Hill (underneath part of the Domus Aurea) Riverbank boundary cippus (*CIL* 6.31545 = *ILS* 5926)		

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