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# The Commonwealth of Massachusetts

### PRESENTED BY:

## Patricia A. Duffy, (BY REQUEST)

To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts in General Court assembled:

The undersigned legislators and/or citizens respectfully petition for the adoption of the accompanying bill:

An Act hard-wiring state offices and investing in hard-wired communications.

#### PETITION OF:

NAME:	DISTRICT/ADDRESS:	DATE ADDED:
Kirstin Beatty	149 Central Park Drive, Holyoke, MA	2/19/2021
	01040	

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By Ms. Duffy of Holyoke (by request), a petition (accompanied by bill, House, No. 112) of Kirstin Beatty relative to hard-wiring state offices and investing in hard-wired communications. Advanced Information Technology, the Internet and Cybersecurity.

## The Commonwealth of Massachusetts

In the One Hundred and Ninety-Second General Court (2021-2022)

An Act hard-wiring state offices and investing in hard-wired communications.

*Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:* 

1	SECTION 1. The legislature finds and confirms all of the following:-
2	Whereas, the commonwealth needs to hard-wire its facilities.
3	Whereas, wireless infrastructure not only significantly threatens health, but is a
4	cybersecurity risk and drains inordinate amounts of energy.
5	Whereas, telecommunication monopolies have used wired services to cover wireless
6	infrastructure costs.
7	Whereas, telecommunications monopolies have allowed deterioration of underground
8	phone lines and service and have concealed cross subsidies to avoid taxes.
9	Resolved, that the policy goals of this act shall support hard-wired communications
10	infrastructure that limits non-ionizing radiation, including for executive offices, buildings, and

11	public educational institutions; infrastructure maintenance and reliability; affordable
12	communications systems with public accountability; and communications security and privacy.
13	SECTION 2. Chapter 40J of the General Laws is hereby amended by striking the
14	language of Section 6B and inserting thereof the following:-
15	Section 6B. (a) As used in this section and in section 6C, the following words shall have
16	the following meanings:
17	"Board" means the board of the Massachusetts Broadband Institute established by
18	subsection (c).
19	"Broadband" means high-speed internet access.
20	"Communications" shall mean both telecommunications and broadband.
21	"Institute" or "MBI" means the Massachusetts Broadband Institute established by
22	subsection (b).
23	"Telecommunications" means services providing for local and long-distance telephone
24	communication, whether through traditional copper land-line phone service or digital services.
25	"Fund" means the Massachusetts Broadband Incentive Fund established by section 6C.
26	"Secure" shall mean communications service and infrastructure that is designed to limit
27	hacking or intrusion through technical design and cybersecurity; communications service that is
28	private barring a warrant; and decentralized, hardened utility services.
29	(b) The corporation shall establish an institute for investment in broadband and
30	telecommunications infrastructure in the commonwealth, to be known as the Massachusetts

Broadband Institute. The executive director of the corporation, subject to the approval of the board, shall appoint a qualified individual as director to manage the affairs of the institute. The mission of the institute shall be to improve the safety, privacy, and security of broadband and telecommunications, while supporting reasonable, affordable, reliable access. The institute shall keep safety foremost in mission.

36 (c) The institute shall be governed and its corporate powers exercised by a board of 37 directors, which shall consist of the following 9 members: the secretary of administration and 38 finance or his designee; the secretary of housing and economic development; the commissioner 39 of telecommunications and cable or designee; the executive director of the corporation or 40 designee; the secretary of the public health department or designee, who shall serve as chair; and 41 4 members to be appointed by the governor, 1 to provide expertise in information technology 42 privacy and security; 1 to provide representation of municipally-owned communications 43 services; and 2 other members representative of fields of experience consistent with the MBI 44 mission. Each member appointed by the governor or attorney general shall serve a term of 4 45 years and thereafter until his successor is appointed. Any person appointed to fill a vacancy on 46 the board shall be appointed in a like manner and shall serve for only the unexpired term of such 47 member. Any appointed member shall be eligible for reappointment. An appointed member may 48 be removed by the governor or attorney general for cause.

49 5 members of the board shall constitute a quorum, and the affirmative vote of a majority 50 of the members present and eligible to vote at a meeting shall be necessary for any action to be 51 taken by the board. The members shall serve without compensation, but each member shall be 52 entitled to reimbursement for actual and necessary expenses incurred in the performance of his 53 official duties. The board shall meet at least 4 times annually. 54 Other than as defined for nomination in this subsection, neither shall a board member nor 55 the director have employment in the communications industries; nor accept gifts or paid 56 speaking engagements from communications or information technology industries; nor have 57 financial interests as pertinent to the position unless in a blind trust. Neither shall a board 58 member nor the director take a position with the telecommunications or broadband industries 59 within two years following completion of service.

60 (d) The objectives of the institute shall include the following:

(1) To improve safety and realign past objectives, the institute shall (i) withdraw from
wireless infrastructure and relevant wireless contracts; (ii) identify infrastructure, including
software, connectors, analog, and other equipment, which best limits non-ionizing radiation
emissions; (iii) preferentially invest and develop infrastructure which best limits non-ionizing
radiation emissions; and (iv) examine copper landline service for suitability with respect to
minimizing non-ionizing radiation emissions as well as other MBI objectives.

(2) To improve privacy and security, the institute shall (i) identify infrastructure,
including software, vulnerable to hacking and harm from electromagnetic pulses; (ii)
preferentially invest and develop infrastructure which best limits hacking and harm from
electromagnetic pulses; (iii) favor investment in proposals which respect and support privacy and
security;and (iv) identify reliable, decentralized and secure sources of electricity, prioritizing use
for emergency communications.

(3) To improve reliability and affordability, the institute shall (i) encourage municipal or
state ownership of communications infrastructure; (ii) discourage monopoly control by private
providers; (iii) favor investment in proposals directly accountable to the public; (iv) support

infrastructure maintenance, improvement, and a fair division of costs among providers; (v)
provide report of any neglected maintenance concerns and required public support by providers,
including such information in the MBI annual report; and (vi) take substantial action to rescue
the deterioration of the copper lines which undergird the telecommunications system.

(4) To improve access, the institute shall (i) support, develop, and favor contracts and
investment in proposals supporting broadband open access; (ii) support contracts, proposals and
policies which enable access by low-income persons; (iii) support development of
communications services through community centers, libraries, colleges, or other jointly shared
facilities; (iv) identify areas lacking adequate communications services for preferential
investment; and (v) fairly distribute investments across the state.

(5) To insure sound investments, the institute shall (I) support public entities and privatepublic partnerships which confer significant benefits including, but not limited to, compliance
with MBI mission and objectives, ownership interest, licensing fees, and sliding-scale training or
consulting fees; (ii) keep MBI information and proceedings accessible, open, and transparent to
the public with contractual documents freely available for viewing.

(e) Subject in all instances to the MBI mission and objectives, the corporation shall
leverage private sector, state, and federal investment by financing the construction and
acquisition of broadband and telecommunications infrastructure to promote the development of
telecommunications and broadband, and may: (1) finance or acquire equipment or other property
to be owned by the commonwealth or 1 or more other public entities, where the equipment or
other property may be leased or licensed by the corporation for a fee which shall be credited to
the fund; (2) make grants to 1 or more public entities for the financing or acquisition of

98	equipment or other property; and (3) make grants or loans to nonprofit entities or private
99	corporations for the financing or acquisition of equipment or other property, provided however
100	that contractual arrangements provide relevant licensing fees; ownership interest; regulatory
101	oversight; and fair rates on loans.
102	The acquisition of an indefeasible right of use of facilities used for the transmission of
103	intelligence by electricity or of a license or other agreement to use electromagnetic spectrum
104	licensed by the federal government shall be the acquisition of an ownership interest in broadband
105	and telecommunications infrastructure and any such transaction shall constitute a transaction
106	with the commonwealth for the purposes of chapter 30B. Any lessee or licensee shall pay lease
107	or license fees to the corporation, which shall credit the fees to the fund. The corporation may
108	provide and pay for advisory services, employees, and technical assistance and take other actions
109	as may be necessary or desired to carry out its purposes.

110 Notwithstanding any general or special law or rule or regulation to the contrary, the 111 department of highways may lease or license for a term not to exceed 25 years any interest in 112 real property deemed appropriate by the corporation and the commissioner of highways to 113 promote the objectives of this chapter. The nature and extent of such interest shall be transferred 114 on such terms and conditions as the commissioner of highways may determine. The terms and 115 conditions of any conveyance executed pursuant to this subsection shall be approved by the 116 commissioner of capital asset management, in consultation with the inspector general and the 117 secretary of transportation.

118 Any interest acquired by the corporation may be leased or licensed by the corporation for 119 use by public entities or nonprofit or for-profit private sector entities subject to the approval of the commissioner of highways and subject to this section including, without limitation, such right of reverter at the expiration of the term. Subject to MBI mission and objectives, the corporation shall lease or license any such interest with competitive processes and procedures within MBI constraints as may be reviewed and approved by the inspector general.

124 Notice that such interest is available for lease or license shall be publicly advertised in 2 125 daily newspapers of general circulation published in the city of Boston and, if such real property 126 is located in any other city or town, in a newspaper of general circulation published in such other 127 city or town, once a week for 2 successive weeks. Such advertisements shall state the availability 128 of such interest, the nature of the competitive process and other information deemed relevant, 129 including the time and place where all pertinent information relative to the interest to be leased 130 or licensed may be obtained, the criteria for selection of a successful proponent, and the time, 131 place and manner for the submission of bids, proposals and the opening thereof. The 132 consideration for any such interest shall be within the estimated range of the fair market value of 133 the interest as determined by the corporation based upon an independent professional appraisal. 134 Except, MBI shall set conditions for bidding to meet MBI mission and objectives. Any such 135 interest conveyed by the department of highways shall revert to the commonwealth at the 136 expiration of any such term.

The corporation may exercise any of its powers to assist or enable the institute to fulfill its purposes as set forth in this section, including the powers set forth in clause (e) of section 4. Without limiting the generality of the foregoing, the corporation shall have the power to develop, lease or otherwise acquire, own, hold, dispose of and encumber conduit, fiber, towers and other real and personal property related to telecommunications and broadband infrastructure that shall be necessary or convenient to the fulfillment of its mission and objectives. The exercise by the

143 corporation of any such powers shall be deemed and held to be an essential governmental144 function.

145 (f) To advances the MBI mission and objectives, the board and institute (1) shall work in 146 collaboration with the corporation and other quasi-public and nonprofit entities and state 147 agencies; (2) may provide advisory assistance to local entities, local authorities, public bodies 148 and private corporations; (3) shall collect information from reasonably available sources 149 including, but not limited to: municipalities and other public entities and agencies of the 150 commonwealth, local and regional nonprofit entities and telecommunications and broadband 151 service providers to develop and maintain an inventory of: (i) locations where broadband 152 services are not available in the commonwealth; (ii) locations where broadband infrastructure is 153 available or is likely to be available to support the provision of services to unserved and 154 underserved areas; (iii) locations where new infrastructure may be necessary to support unserved 155 and underserved areas; (iv) locations where infrastructure is in disrepair; and (v) the quality of 156 such services, in reference to all objectives, including whether existing services are wired or 157 wireless, as well as the speed of data transmission, length of service during power outage, and 158 cost of such services. Such information shall be freely provided to the public for viewing.

(f) The board shall establish a detailed long-term plan for the operation of the institute and the administration of the fund and shall consult with the joint committee on telecommunications, utilities and energy; the joint committee on children, families, and persons with disabilities; and the joint committee on economic development and emerging technologies on the plan. The plan, and any amendments thereto, shall be subject to the approval of the secretary of health and human services and the secretary of administration and finance and shall be filed with the clerks of the house of representatives and the senate who shall forward the same

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166 to the house and senate committees on ways and means, the joint committee on

telecommunications, utilities and energy and the joint committee on economic development andemerging technologies.

169 (g) The board shall annually adopt an operating plan governing reasonable 170 disbursements from the fund and, to the extent the plan provides for disbursement of 171 appropriations or other moneys authorized by the general court, the plan shall be subject to the 172 approval of the secretary of housing and economic development and the secretary of 173 administration and finance. The board shall file the plan, and any amendments thereto, with the 174 clerks of the house of representatives and the senate who shall forward the same to the house and 175 senate committees on ways and means, on children, families, and persons with disabilities, the 176 joint committee on telecommunications, utilities and energy and the joint committee on 177 economic development and emerging technologies.

MBI accounts shall be public and freely viewable by the public to provide evidence of
good faith. Salaries of MBI employees must be reasonable and in line with state government
salaries.

(h) The board shall promulgate rules and regulations for the administration andenforcement of this section and section 6C.

(i) To advance the MBI mission and objectives, the board shall review and recommend
changes in laws, rules, programs and policies of the commonwealth and its agencies and
subdivisions that furthers appropriate financing, infrastructure and development for
telecommunications and broadband access in the commonwealth.

(j) The board shall prepare, publish and distribute, with or without charge, as the institute
may determine, any studies, reports and bulletins and other material as the institute deems
appropriate.

(k) The institute shall file an annual report of its activities, progress towards objectives, and findings with the governor and the clerks of the house of representatives and the senate who shall forward the same to the joint committee on telecommunications, utilities and energy, the joint committee on economic development and emerging technologies, on children, families, and persons with disabilities, and the house and senate committees on ways and means.

(1) Actions of the board may take effect immediately and notice thereof shall be published
and posted. Meetings of the board shall be subject to section 11A1/2 of chapter 30A. Records
pertaining to the activities of the institute shall be subject to section 10 of chapter 66, unless
exempted under subsection (h) of section 12. The operations of the institute shall be subject to
chapters 268A and 268B; provided, however, that the members of the board shall be considered
directors for the purposes of the fourth, fifth and seventh paragraphs of section 3.

(m) Sections 38A1/2 to 38O, inclusive, of chapter 7, section 39M of chapter 30, subject
to the provisions of subsection (c) of section 4A and sections 44A to 44J, inclusive, of chapter
149 shall apply to the operations of the institute.

(n) Intent to manipulate the spirit of or failure to comply with its mission, rules, and
objectives as stated in this section shall be grounds for a cause of action against the MBI, as well
as or against persons complicit. This action may be brought forward by the attorney general; a
municipality or municipalities; or citizens of the Commonwealth. A vote of no confidence in the

208 MBI or corporation by the House of Representatives or Senate shall force the attorney general to209 investigate.

SECTION 3. Section 3 of Chapter 23A of the General Laws as appearing in the Official
2021 edition is hereby amended by striking the first sentence of subsection (a) and inserting in
place the following subsection:-

MOBD shall contain the following 4 divisions: business services, entrepreneurial and small business development, telecommunications and broadband development, and manufacturing development.

SECTION 4. Section 3 of Chapter 23A of the General Laws as appearing in the Official
2021 edition is hereby amended by striking subsection (b) and inserting in place the following
subsection:-

219 (b) The function of the director of telecommunications and broadband development, 220 hereinafter the director, created pursuant to subsection (a) shall be to facilitate access to hard-221 wired, affordable, secure, private, safe, and reliable telecommunications and high-speed 222 broadband connectivity across the commonwealth to promote economic development, meet the 223 commonwealth's homeland security and emergency preparedness needs, improve government 224 and institutional efficiency, and improve the quality of life for the commonwealth's residents. 225 The director shall, in consultation with the Massachusetts Broadband Institute established 226 pursuant to section 6B of chapter 40J, develop a state telecommunications plan to ensure 227 extensive internet and broadband access for every community within the commonwealth. The 228 duties and powers of the director shall include, but not be limited to, the following: (1) 229 identifying communities that lack affordable, safe, secure, reliable, accountable, hard-wired

230 internet and broadband service; (2) identifying areas where, due to geographic remoteness, 231 sparsity of population or other considerations, private-sector capital investment is not sufficient 232 to meet the present and future needs of the area, and in those areas (i) develop strategies, 233 including but not limited to the creation of public entities or partnerships with municipally-234 owned service as a means to provide services; and (ii) facilitate the development of private, joint 235 public-private, or public initiatives which afford open, content-neutral services and provide 236 accountability of service providers; (3) examine and identify the best practices of other states, 237 municipalities, and foreign governments relative to achieving safe, secure, affordable, reliable, 238 private, and accessible services, including in underserved areas, including, but not limited to, the 239 creation of public entities; (4) working in conjunction with the executive office of transportation 240 and construction, the division of capital asset management and maintenance and other 241 appropriate state, regional and municipal agencies, develop a plan to ensure that each state 242 construction project, including but not limited to, buildings, roads and bridges shall include 243 enable access for relevant infrastructure, including appropriate design for placement of wires 244 only for hard-wired service; (5) investigating provision of internet and broadband service which 245 minimize non-ionizing radiation and emphasizes reliability in downtown areas and public 246 universities, commencing with areas of high growth, and working in consultation with the 247 Massachusetts Broadband Institute, established by section 6B of chapter 40J of the General 248 Laws, to develop demonstration projects to facilitate safer, secure, accountable, affordable, and 249 reliable access in underserved small-to-mid sized communities; (6) investigating ways to 250 financially support provision of and maintenance of safer, secure, reliable, accountable, 251 affordable, hard-wired broadband, telecommunications, and internet with minimal non-ionizing 252 radiation emissions, including a state universal service fund for the purpose; (7) examine and

253 identify copper landline condition, importance, availability, and maintenance needs; (8) 254 identifying any state law or regulation that prevents establishing a hard-wired, safer, secure, 255 reliable, affordable, accountable telecommunications, internet, and broadband services or 256 provides unreasonable competitive advantages to regulated, telecommunications carriers or cable 257 operators, including access to, or use of, municipal or other facilities or rights-of-way; (9) 258 working with the department of telecommunications and cable and other appropriate state 259 agencies and private parties to identify the locations of dark fiber and telecommunications tower 260 access areas owned by telecommunications companies in the commonwealth; (10) identifying 261 federal regulations and statutes that impede the deployment of safer, secure, private, reliable, 262 hard-wired internet, telecommunications and broadband infrastructure and services that minimize 263 non-ionizing radiation exposures and advocating before the United States Congress and the 264 Federal Communications Commission for appropriate amendment of these federal policies to 265 provide for services as defined; and (11) taking other actions considered necessary to fulfill the 266 goals described. The director of broadband development shall work in consultation with 267 Massachusetts Broadband Institute, established by section 6B of chapter 40J of the General 268 Laws. Notwithstanding the requirements of subsection (a), the director of telecommunications 269 and broadband development shall have extensive experience in the broadband, 270 telecommunications or data communications industry, including, but not limited to, the 271 utilization of market-based strategies to induce deployment, the creation of public entities or 272 partnershps to facilitate deployment, and a demonstrated knowledge of technologies that bring 273 hard-wired internet, telecommunications, and broadband to underserved areas. The director shall 274 annually, no later than December 31, submit a report, including any recommendations for 275 legislation, to the secretary of the executive office of economic development, the director of the

department of business and technology, the commissioner of telecommunications and cable, the chairpersons of the house and senate committees on ways and means, the chairpersons of the joint committee on economic development and emerging technologies and the chairpersons of the joint committee on telecommunications, utilities and energy.

280 SECTION 5. Section 63 of Chapter 23A of the General Laws as appearing in the Official 281 2021 edition is hereby amended by striking the first sentence of subsection (b) and inserting in 282 place the following sentence:-

Eligible public infrastructure projects authorized by clause (i) of subsection (a) shall be located on public land or on public leasehold, right-of-way or easement and, with regard to all proposals including communications must minimize non-ionizing radiation and be hard-wired.

286 SECTION 6. Section 19G of Chapter 78 of the General Laws as appearing in the Official
287 2021 Edition is hereby amended by inserting after the first paragraph the following paragraph:-

The board shall use funding to encourage public libraries to reduce non-ionizing radiation exposure, including from use of wireless communications and electronic technology, by hardwiring connections, segregating areas of exposure, careful product purchase, and other means to reduce non-ionizing emissions from technologies.

292 SECTION 7. Section 7A of Chapter 7D of the General Laws as appearing in the Official
2021 Edition is hereby amended by inserting after the second sentence the following:-

The executive office of information technology and security shall require and, to the extent within its means, implement the use of hard-wired information technology services and practices which minimize non-ionizing radiation throughout all executive offices and agencies.

297	The executive office of information technology shall also be transparent with executive offices
298	regarding threats of data loss, and shall recommend alternatives to information technology as an
299	option for secure storage when useful.
300	SECTION 8. Section 3 of Chapter 7D of the General Laws as appearing in the Official
301	2021 Edition is hereby amended by striking the phrase "necessary for individual agencies to
302	comply with federal law" and inserting in place the following:-
303	necessary for individual agencies to comply with state and federal law
304	SECTION 9. Section 14 of Chapter 45 is hereby amended by adding after the last
305	sentence the following new paragraph:-
306	Construction of wireless facilities shall be prohibited on or within 1000 feet of
307	playgrounds for small cell networks and 3000 feet for aggregated antennas on cell towers.
308	SECTION 10. Chapter 15A of the General Laws as appearing in the Official 2021
309	Edition is amended by striking section 3A and inserting in place the following section:-
310	Section 3A. The secretary of education shall with the relevant boards, departments, and
311	agencies coordinate a plan to hard-wire public education facilities, reduce non-ionizing radiation,
312	and support safer and critical use of technology. The plan shall be referred to as safer edTech, or
313	SE, and incorporate the following goals:
314	(a) health- and privacy-conscious implementation of technology, including, but not
315	limited to, the establishment of a hard-wired statewide telecommunications and broadband
316	system with minimal electromagnetic emissions among public college and university campuses
317	and school districts;

(b) facilitating the implementation of a statewide professional development plan and
educational materials in coordination with the commissioner of education for teachers,
principals, and superintendents to clarify relevant laws, duties, and prevent ignorance from
leading to greater non-ionizing radiation exposures as well as renewed transmissions when
software accidentally resets; and

323 (c) facilitating a statewide professional development plan and educational materials in 324 coordination with the commissioner of education for teachers, principals, and superintendents to 325 support cybersecurity, prevent confidential data losses, highlight current privacy risks, 326 recommend solutions, clarify state and federal privacy laws, and may further discuss other 327 aspects relevant to critical and careful use of technology.

328 (d) For the purposes of this section, the SE plan shall be broadly construed to include, but
329 not be limited to, programs, courses, and capital expenditures including computer hardware and
330 software, networks, television, fiber optics cable, calculators and video and audio tapes.

(e) Subject to appropriation, SE funds may provide grants to universities, colleges,
schools and school districts for the purposes of purchasing the equipment and other materials
necessary for the implementation of said plan. The secretary and the board of elementary and
secondary education along with the board of higher education may establish such advisory
groups or committees as deemed necessary for the development and implementation of the SE
plan.

337 SECTION 11. Chapter 159 of the General Laws as appearing in the 2021 Official Edition
 338 is hereby amended by striking the first sentence in section 36 and inserting in place the
 339 following:-

340 Section 36. The department shall provide for an annual audit by employees duly341 authorized by it of all accounts of any common carrier or class of common carriers.

342 (a) Every common carrier shall provide an annual report verified by the oath of the 343 president, vice-president, treasurer, secretary, general manager or receiver, if any, of such carrier 344 or by the person required to file the same. The verification shall be made by said official holding 345 office at the time of the filing of the said report, and if not made upon the knowledge of the 346 person verifying the same shall set forth the sources of his information and the grounds of his 347 belief as to any matters not stated to be verified upon his knowledge. When the report of any 348 such carrier or person is defective, or believed to be erroneous, the department shall notify the 349 carrier or person to amend the same within a time prescribed by the department.

(b) The originals of the reports, subscribed and sworn to as prescribed by law, shall be preserved by the department and freely viewable by the public, along with the department's report, including by executive agencies, inter-agencies, and legislators. The department may also require such carriers and persons to file periodic reports in the form, covering the period and at the time prescribed by the department. The department may also require of any such carrier or person specific answers to questions upon which the department may need information.

(c) If such carrier or person shall fail to make and file the annual report within the time above specified or within the time as extended by the department, or shall fail to amend such report within such reasonable time as may be prescribed, or shall fail to make specific answer to any question, or shall fail to make the periodic reports when required as herein provided, within the time and in the form prescribed by the department for the making and filing of any such report or answer, such carrier or person shall forfeit to the state the sum of 2 hundred dollars for

362 each and every day it shall continue to be in default with respect to such annual report, 363 amendment, answer or periodic report. Such forfeiture shall be recovered in an action brought by 364 the attorney general in the name of the people of the Commonwealth. The amount recovered in 365 any such action shall be paid into the state treasury and credited to the general fund. 366 (b) The department shall collect detailed audit information including but not limited to 367 establishing whether (1) costs are correctly allocated to (i) hard-wired vs. wired services; (ii) 368 private vs. public services; (iii) telecommunication vs. information technology services; (iv) 369 prevent cross subsidies; (v) render services charged; (2) adequate funds are applied to 370 infrastructure maintenance, including underground cables, fiber, and copper lines; and (3) rates

and subsidies are fair.